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INLAND EDUCATOR

A JOURNAL FOR THE PROGRESSIVE TEACHER

EDITED BY WALTER W. STORMS

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AUGUST, 1899, TO JANUARY, 1900.

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A JOURNAL FOR THE PROGRESSIVE TEACHER

Edited by Walter W. Storms

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Chas. M. Curry

Departments: Primary, Flora J. Cooke
Mathematics, Robert J. Aley
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AUGUST, 1899

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VOL. IX. AUGUST, 1899. No. 1.

The Educator for '99-'00. It is a notable fact, and no less a deplorable one, that in politics parties have one platform to get in on and another one to stand on after they are in. The former represents theory, the latter, practice; the former usually has a good deal to commend it, while the latter often has a good deal that ought to condemn it. Our contention is that so far as possible theory and practice in all relations of life should agree. When, therefore, we announce our partial program for the new school year we do it with confidence and invite our friends to accept it in that way. It is true, of course, that even the *best laid* plans are not always realized in full, but we now have definite arrangements for contributions as follows, and our readers may reasonably expect *all* that is here promised, while they may be *sure* of much besides:

To the special department of mathematics which has been so acceptably conducted during the past year by Professor Aley there will be added a department of music to be conducted by Superintendent J. G. Crabbe of Ashland, Ky., and a regular primary department under the direction of Miss Flora J. Cooke of the Chicago Normal School. Professors Francis M. Stalker and Chas. M. Curry will be frequent contributors as associate editors. Dr. Chas. R. Dryer will furnish at least three articles on the use of the new Frye Geographies, Dr. D. W. Dennis of Earlham College three on some phases of nature study, Miss Elizabeth Harrison of the Chicago Kindergarten College, four on Kindergarten and allied subjects. Professors E. W. Kemp and L. J. Rettger will prepare six articles each on their respective specialties, history and physiology. Dr. B. W. Evermann will contribute an occasional article describing some of his many travels. Professors S. H. Clark and Howard Sandison are to prepare the comment upon the work of the township institute. Professor J. T. Scovell is to continue his contributions on Scientific Temperance. "Some Famous Stories" is the title under which Professor Curry will write a series of six articles in the same informal style as those on reading, the last of which is yet to appear. He will also assist Mrs. Carrie B. Adams in the preparation of three elaborate special day programs. Professor Stalker's papers on the Public Schools are to continue.

One or more articles are promised from each of the following persons: Dr. J. Mark Baldwin, Dr. Chas. R. Henderson, Professor Charles Zeublin, Professor A. B. Milford, President W. T. Stott, Professor J. B. Wisely, President R. G. Boone, Professor A. R. Charman, Professor W. A. McBeth, Dr. Andrew Stephenson, Professor Thomas F. Moran, Superintendent McHenry Rhoads—*and others.*

* * *

Where Are You? The peculiarly uncertain tenure of the teacher's position prevents large numbers of them from locating permanently where they teach. This means a change of address when school closes and another when it is resumed, even if the same position is held. This reminder is thrown out with the hope that subscribers will help us to keep track of changes, sending word as early as the twentieth of the month. We do not mind making changes as often as desired, but to render the satisfactory service that will best please both you and us requires this little aid from you. Kindly remember that periodicals can not be forwarded beyond their first destination unless additional postage is paid in advance. For THE EDUCATOR the rate is two cents per copy.

* * *

Honor for Brother Corson. The unanimous vote of the National Educational Association was given to Hon. O. T. Corson as president of the association for next year. Mr. Corson is the editor of the *Ohio Educational Monthly*, and the INLAND EDUCATOR offers its most sincere congratulations.

Free School Books and Better School Buildings. These are the two important reforms which Superintendent Jones wishes to see realized in the Indiana system during his incumbency. It is doubtless true, as Professor Jones states, that the free text-book plan has worked well wherever it has been faithfully tried. The fact that the present system makes those children who are unable to buy necessary text-books objects of charity is one strong argument in favor of the change. The other reform in view has particular reference to school buildings in the country districts. Better locations, better lighting, better heating, better ventilation, are questions not only of educational but of vital interest to every child in the community. These things are now considered essentials, to say nothing of more attention to pictures and other decorations that contribute so much to the higher life of the child.

* * *

Three Valuable Reports. One result of the tendency to specialize, now so prevalent in all departments of work and study, is the submission of certain definite questions to carefully chosen committees who are expected to make an exhaustive investigation and a full report. Several years ago the National Educational Association recognized the value of this method of investigation and there have since been several reports which stand as the most important documents in our educational literature. The committees of Fifteen on Correlation, and of Ten on Secondary Education, will be readily recalled. Three other of these committees have just reported—that on Normal Schools, that on College Entrance Requirements, and that on Relations of Public Libraries to Public Schools. The first of these takes up such questions as the function, administration, variations, and inner life of the normal school in the different parts of the Union. An account of Professor Rein's practice school in Germany, and another of a typical English training college are interesting appendices. The committee on college entrance has been at work since 1895, and there have already been partial reports. The complete work now published, designed to harmonize the relations between high schools and colleges, will be of great interest to all who have to do with the preparation of study courses in the respective schools. The report that will be of greatest interest to the mass of teachers in the public schools is the one on libraries. The conception of a library as a storage place for books has grown into that of a working place among books. This work that formerly began chiefly in the high schools now begins well down in the grades. Even here it is not merely as a set of reference books, or as supplements to the regular text-books that a school library has value, but as the source and foundation of a taste for good literature. With the growing appreciation of this value has come a desire to let down the barriers between the children and the books. Not preservation but *use* is the motto to-day. The librarian who was a guardian of books has changed front to become a guide for his patrons, and cooperation is everywhere advocated between the public library and the public school. It is such questions as these that the report considers. It is rich in practical suggestion and contains several lists of books from which we shall print in early issues of THE EDUCATOR.

* * *

The Man With the Hoe. Ranking in popularity with Kipling's *Recessional* and *The White Man's Burden* is the poem that appeared in THE EDUCATOR last month with the above title. Its author, Edwin Markham, assures us that he did not anticipate any such interest as the poem has aroused; and it is evident that the fame to which he has awakened is not likely to disturb the even tenor of his way as principal of the observation school in the University of California. Ten years ago, he says, he first saw Millet's painting, which impressed him as being more terrible than anything in Dante. He saw in it a type of the toiler brutalized through oppression, and for ten years the effect upon his mind lingered, or deepened, perhaps, until it became the poem. The critics say he "has struck a universal chord." This may be true, but is not the popular response due rather to the deep under-current of revolt against the industrial conditions that make beings of this type at all possible? In this sense the poem expresses the spirit of the time. According to the *Bookman* Mr. Markham believes "that all true progress of men is a progress unto solidarity, an ever growing realization of the principle of fraternity. Fraternity is to him the holiest of all words, being at once the essence of all gospels, and the fulfilment of all revelations."

* * *

A Reply to Mrs. Davis. The article that Mrs. Schuyler Van Rensselær contributes to the *North American Review* for July is quite different in tone from that by Mrs. Rebecca Harding Davis in the same periodical for June. It is a credit to the *Review* that it accepts so able and so full, though at the same time so fair a reply as that which Mrs. Van Rensselær writes.

She appears to have recognized the New England town to which Mrs. Davis alluded, and she shows how the implication that over-education is a blight upon the town is wholly wrong. A sensible answer is made to the question of the efficiency of our schools, and the charge that we have made a fetish of the schoolhouse in the United States is both accepted and approved. The article is an encouraging one throughout, and stands in fine contrast with the depressing paper that Mrs. Davis felt called upon to offer.

* * *

Free Speech. It is not easy to believe that any one in this day would question the right of people to express their convictions in a peaceable way. Yet it has happened lately that certain prominent educators have been severely criticised for their public utterances on subjects of general interest. A notable instance was that of Dr. E. B. Andrews, who, while president of Brown University, delivered himself of certain opinions on the silver question that in staid New England seemed sufficiently heterodox to require his dismissal from the presidency. It will be remembered how the action of the trustees called out an immediate and emphatic protest from the alumni and patrons of the institution, and from the public press as well; and how the offending president was invited to remain. This prominent instance is by no means the only one. Three years ago Professor Bemis, who then occupied the chair of sociology in the University of Chicago, was compelled to resign because he had expressed radical views on social conditions. And now Professor Albion W. Small, head of the department of sociology and economics in the same school asserts his right to hold and express personal opinions by a vigorous arraignment of trusts and capitalism. His chief contention is that capitalism is the root of nearly all the industrial evil. Considering the fact that the university in which he teaches owes its existence mainly to a seven-million-dollar endowment from John D. Rockefeller, a most distinguished exponent of capitalism, there may well seem to be a touch of incongruity, and hence more ground for objection than in ordinary cases. Nevertheless, the congregation of the university, composed of fifty-five representatives from faculty, trustees and alumni, all arrayed in cap and gown, moved to action by the stir which Professor Small's utterance has created, declares absolutely for freedom of speech among the college professors and officials. It is understood, of course, and expressly stated, that "the university does not appear as disputant on either side upon any public question, and that the utterances which any professor may make in public are to be regarded as representing his own opinions only." This is right, and best. The University of Chicago is sure to be followed by other large institutions, and when individual teachers feel free to enter into the discussion of the great political and moral questions of the day their influence will be multiplied many fold.

* * *

Reminiscence. The session of the N. E. A. this year at Los Angeles brings up various interesting reminiscences. Among them those suggested by the old Spanish life in the Southwest is perhaps the most interesting historically because it is farthest removed in time, and is most tinged with romance. One recalls, too, the Forty-niners. There is doubtless more than one man now living whose story of "prairie schooners" fifty years ago would stand in striking contrast to the luxury of a trip that his son or his daughter has just made in a through Pullman. But as we comment on the spectacle of thousands upon thousands of teachers going to the Pacific coast for a four-day educational meeting, the wish arises that our great statesmen who less than a century ago feared the wild and unknown West could somehow be witnesses to-day. In 1803 Fisher Ames, a leader of New England political thought, wrote to a friend: "Now by adding an unmeasured world we rush like a comet into infinite space. In our wild career we may jostle some other world out of its orbit, but we shall in every event quench the light of our own." Such an opinion regarding the purchase of Louisiana was held by a man who was diplomatist, scholar and statesman, a United States senator from Massachusetts, and so eminent that he declined the presidency of Harvard College. Later still, two other United States senators, one of whom was Benton of Missouri, made earnest speeches, entreating the senate to refrain from extending government territory west of the Rocky mountains. To a far corner of this remote region, now as much an integral part of the Union as New England itself, 15,000 teachers of our public schools travel to-day, with speed, comfort and safety, and assemble for deliberation and counsel. A more suggestive example of unforseen growth and development it would be hard to find.

* * *

"The Roosevelt Idea." At the first reunion of the Rough Riders and their colonel some of the speeches and the demonstrations were of the kind to awaken thought. One man of the gallant regiment

Lafe Young by name, an Iowa journalist, declares that since the close of the Civil War the three great ideas which stand prominently out in American life are Henry W. Grady teaching the confederate soldier how to decorate the confederate grave without disloyalty to the common flag; Booker T. Washington showing how two races, the white and the black, may live in the same state, with a common purpose; and Colonel Roosevelt teaching that the law must be administered for the rich and the poor alike. The three ideas are not very closely allied, and yet in them all there is a common element which stands for loyalty to principle. When Roosevelt was organizing his now famous regiment it made small difference to him whether a fellow came from the cattle ranch or from the bosom of the "four hundred;" whether he were white or black or red, so he might be a man. And when all these types went up the San Juan hill shoulder to shoulder the victory over race and class and sectional prejudice was quite as large as that over the enemy at the top of the hill. In a recent address to the alumni of Columbia University Roosevelt said "We don't need nice, dainty men, but the man of high instincts who isn't afraid to go down into the hurly burly of the arena." At one of the splendid receptions tendered him on his trip out west he said "I know no such thing as sectionalism in considering my country. In the West I have come in contact with the stuff of which heroes and statesmen are made; I have been close to the foundations of the Republic." The Chicago *Times-Herald* speaks of the inculcation of honesty in the minds of the people as "the Roosevelt idea." This is good. And if 1904 is still so far off that THE EDUCATOR will not be suspected of joining in "Teddy's" presidential boom it would like to hold up his official life as the ideal for all men who shall become public officials, and as the standard for men who shall elect them. However, we are not in the business of politics. Much less do we wish to be or to seem partisan. We simply agree with Mr. Charles R. Williams in his address to the graduating class of the Indiana state normal, that the hope of politics is not in the Quays and Hills, the Murphys and Platts, the Gormans and Brices, but in men like W. L. Wilson and Theodore Roosevelt, who have convictions and the courage of them. To this extent we think every teacher should teach politics. But it is not alone nor chiefly official integrity that we wish to emphasize. When Roosevelt was running a cattle ranch he discharged one of his hands for attempting to brand a stray animal that had wandered in from another range. Almost any of us would dismiss a man for stealing from us, but to to do so when he is stealing *for* us is another story. Moreover, it is well understood that most ranchmen appropriate stray cattle in this way, and Roosevelt's refusal to do so seems to be even a better example of integrity than his official honesty. This incident will mean much more to a boy than will purity in politics. This is the "idea" and the ideal that we need to teach—to be upright and square in every-day conduct. This is the real thing behind true patriotism. This is the large element that makes not only citizens but men.

* * *

One Year's Campaign.

Now that the school board in Chicago has shown its confidence in Dr. Andrews and his policy, those self-ordained guardians of the city's welfare who suspected a scheme between Superintendent Andrews and President Harper to create a market for all the graduates the university could supply, may feel free to take a few weeks off. The editor of *The Dial*, in his issue of July 1, discusses the situation in a judicious way which shows better than anything else we have recently seen the danger of prejudice and the unfair influence which may be exercised over a mass of readers who do not know all the facts in any given case. We quote a few sentences: "It is not easy to disengage from the tangled skein of rumor and recrimination the thread of any coherent argument, and the more one examines the charges brought against the present policy of school administration the more bewildered one becomes at the infusion of personal feeling and the confusion of thought. As far, however, as any argument is discernible, it seems to be directed against two of the aims of Superintendent Andrews—that of establishing a system of true executive control and responsibility, and that of raising the standard of efficiency and intellectual ability among the body of instructors and administrative officers. It would seem that a superintendent who kept these aims in view should deserve and receive the heartiest support from all sections of the community. For the past score of years these aims have been set, by all the organs of serious educational opinion, foremost among those that should be worked for in the betterment of public school education. They have become the merest commonplaces of educational discussion, and it is rather late in the day to be called upon to defend them anew. But such is the distorting power of prejudice over the simplest and clearest ideas that the guarded annunciation of these aims by

the present school administration has evoked an attack of the most violent nature, in which the plain promises of the superintendent have been ignored, his motives impugned, and even (as in the case of the shameless resolutions of the Chicago Federation of Labor) his personal character aspersed. There is nothing in the course of Superintendent Andrews to indicate that he has any other object at heart than that of strengthening the system under his charge by the application to its work of the most enlightened ideas and the recruiting of the most efficient co-laborers in this great service. He has been less than a year at his difficult task, and it is not yet time to demand results. But in the course of that year he has at least shown to all who have eyes to see, and who are in a position to take a disinterested view of his position, that he has his work earnestly at heart, and that he deserves from the whole community that cordial support with which the best elements of the community (including those that viewed his original appointment with some apprehension) have already expressed their recognition of the strength and the sincerity of his purpose."

* * *

Native Ability to Teach.

In a remarkably practical paper, read before the N. E. A. department of Superintendence in February last, Dr. James E. Russell of New York named four essentials in the teacher's preparation: (1) general knowledge, (2) professional knowledge, (3) special knowledge, (4) skill in teaching. The treatment was logical and clear, but in our judgment the fourth point did not receive the attention which its importance seems to demand.

Since that meeting we have taken pains to examine quite a large number of catalogues and announcements of the best training, normal, and teachers' schools in the country to find that entrance conditions, where they are imposed at all, are based upon age, scholarship and moral character, with the added requirement in one school of "qualifications for undertaking professional work." In making a plea for more attention to skill in teaching we realize how difficult it is to determine such skill, especially at the time a student enters upon professional study. Yet it may be admitted that in any group of candidates there will probably be three classes: (1) those who seem especially promising, (2) those who seem doubtful, (3) those who clearly lack natural qualities that would fit them to teach. The determination of this last class would be effected by personal examination, if at all, and could be entrusted only to a man of peculiar ability and deep psychological insight. But if such a differentiation is at all possible the good of the candidate, the good of the profession and the good of the children who would afterwards become the victims of vain endeavor all require it.

However, as the class advances in the course the manifest unfitness must become more and more evident to observant teachers. If all teachers would observe and record such evidences, an impartial comparing of notes should determine, early in a normal student's course, his probable native ability. When Mayor Quincy of Boston a few months ago declared his belief that there should be a weeding out of those pupils in the high schools who did not show marked ability to assimilate the high school course we entered our protest on the ground that the high school is intended to provide the basis for general culture to all who can avail themselves of it. If the high school prepared for specific occupations we should object to the special training of the plainly unfit just as we do in the case of the preparation of teachers.

The ambition of the teacher who may have had poor success for a first year is altogether admirable, and it may require courage to advise a change of plans. Yet the consequences and the interests involved seem to warrant such frankness. Let us see what benefits might result:

(1) It would be an honest service to the person thus advised, sparing him loss of time in preparation, loss in pursuing an occupation that would be abandoned, and the humiliation of failure in the end. (2) It would help to reduce the evil of using the schoolroom as a stepping stone to other professions. (3) It would help to reduce the over-supply that now exists and so raise the standard of the profession. (4) It would help to end experiment for the benefit of the teacher at the expense of the pupil. This is doubtless the most serious objection to existing methods. The importance of such a reform would seem to justify a continuous effort to realize it. If it seems impracticable now, all the greater is the need of giving it careful thought. Scholarship, tact, executive ability, skill in maintaining order are all desirable. A person having

all these up to the required per cent. may keep school most successfully and yet be no teacher. Professor James goes even farther and says that "to know psychology is absolutely no guarantee that we shall be good teachers." The problem is how to recognize that spiritual quality which knows mind without analyzing it, which invites sympathy by giving it, and which is always stimulating the desire to know. This quality is as intangible as the "call" to preach and it is quite as holy.

* * *

"Redeeming the Time."

There is an often repeated anecdote about a passenger on one of the great trans-Atlantic steamers who asked the captain one afternoon how soon they should reach Queenstown. The captain said that if it was clear the next morning the Irish coast would be visible from the deck of the steamer at four o'clock. The passenger admiring the captain's confidence, answered "Suppose tomorrow morning should be clear, and the coast nowhere in sight, what would you say?" "I should say," replied the captain, "that Ireland had sunk." How we all admire the master of a great vessel who brings his ship to port *on time*. Even at the railroad station there is something fine about a big throbbing engine rolling in with its train load, on time. It often happens that the bulletin board must record so many minutes late, but the average traveler, passing the time with his newspaper or a book little knows what extra switching, what manipulation, what unforeseen changes, what disappointments, perhaps, a late train involves. And yet, most delays on a railroad are unavoidable. The plans are laid on a basis of punctuality. The train begins its run on time, and if a man wants to take it he doesn't risk a calculation that it will start even one minute late. We ought to learn punctuality from the railroads, but unhappily we do not.

A meeting is called to begin at half-past seven, but members straggle in until eight, and proceedings commence a half hour behind time. Those who come late have simply "held up," as the highwaymen say those who were there on time. You order some manufactured article and have the promise that it will be ready by Tuesday noon. Tuesday evening you call for it and find that it is 'not quite finished.' No explanation is made, for it is the daily experience and supposed to be taken for granted. Still, the manufacturer would resent the charge that he had stolen from you the time you must take to call again. You purchase groceries in the morning with the proviso and the assurance that they be delivered not later than ten o'clock. At noon you go home, and lo, they come, even while you are blessing the unfaithful trader. The grocer made a promise that he could not keep, just for the sake of making the sale. The plumber promises to come to-day to repair a broken pipe; but he doesn't come until day after to-morrow. He knew he couldn't when he promised, but for the sake of holding the job he takes the order and does the best he can while you practice the virtue of patience. If you boycott a dealer when you find him unreliable it will not take long to go the rounds of all in your neighborhood; and you will have to commence over again at number one. So we are at the mercy of a wretched system that tolerates tardiness on every hand.

Dare we hope to reform our grocer and our plumber? Hardly; the commercial conscience is asleep. But we dare hope all things for the children who will take their places by and by. THE EDUCATOR believes that human nature advances. It addresses itself to the teacher of progress. If a paragraph of this kind will help one such teacher to resolve that the virtue of punctuality will have renewed emphasis and wider application in her school this year the effort is repaid. There is no doubt that all teachers urge the value of punctuality at school, but we do not enough emphasize the virtue of punctuality in general—the virtue of keeping engagements, of meeting obligations, of fulfilling promises. Business men recognize the truth of the old saying "time is money." Rather let us say time is opportunity. It is pitiful to see a man wasting his own time, but it is wicked to take that of another, too.

We have a good deal of admiration for the little monthly called *The On Timer*, published at Denver, Colorado, and "devoted exclusively to the rare virtue of punctuality." It carries as its motto the words of Saint Paul, which we have quoted at the head of this article, and it is the appearance of another copy of this little crusader that prompted this expression of things we have long wished to say.

SOMETHING ABOUT PORTO RICO.

By BARTON WARREN EVERMANN, Ph. D.

IN writing about Porto Rico it is not easy to decide just which phases of the subject may be best for a magazine article limited to a few pages as this must be. Since returning last March from a winter spent in that beautiful island I have been asked hundreds of questions, and of all sorts, by my friends. In recalling these questions I have tried to determine which were asked most often; and in this article I shall consider these briefly without paying any special attention to a strictly logical arrangement. And first, as to the geography of Porto Rico:

This "Gem of the Antilles" is in longitude about 66° west, and latitude 18° north. The latitude is approximately the same as that of Haiti, Jamaica, Guatamala, Bombay and the northern Philippines. It is due south of Maine. It is eleven degrees, or about 700 miles, east of Washington, or 1,200 miles east and 1,400 miles south of Indianapolis. It is 1,500 miles from New York, 1,300 from Norfolk, or 1,000 from Key West. By steamer from New York it is four and one-half to five days. The island is about ninety-five miles long and thirty-five wide. Its area is, in round numbers, 3,600 square miles, or a little more than one-tenth the size of Indiana. The coast line is about 360 miles long, and the form of the island is quite regular. The north and the south coasts run nearly due east and west, and nearly parallel. The east and west ends are less regular. There are few bays or indentations. The only harbor on the north coast is at San Juan. The south side has only two good harbors—Guanica and Jobos, and open roadsteads at Ponce and Arroyo. There are open roadsteads at Aguadilla, Mayaguez and Puerto Real on the west, and at Fajardo on the east, but no harbors. These roadsteads afford safe anchorage only when the wind is right.

The island is exceedingly mountainous. Viewed from the sea on the north it presents the appearance of a great mass of conical hills and sharp mountain peaks jumbled together in the most confusing manner. A nearer approach shows that the island is made up of a narrow, relatively level coastal plain and a central mountain region. The coastal plain varies in width but is always narrow.



PUPILS AND TEACHER IN GIRLS' SCHOOL AT AIBONITO.

Near the water's edge are beautiful groves of cocoanut trees, and back of these are the sugar plantations and some grazing lands where may be seen herds of fine cattle. Then come the hills and mountains. Nowhere else have I seen such sharp peaks except the naked rocky peaks of some of our western mountains. The hills in the limestone region along the north coast are as regular, sharp and uniform as hay-cocks. The mountains are remarkably rough and irregular. There is no definite crest line; the surface has been etched by erosion into a multitude of gabled lateral ridges (or *cuchillas*), separated by deep V-shaped gorges. These mountains are not high, but they make most excellent use of their height by rising abruptly and steeply from the coastal plain.

The mountains toward the eastern end of the island are the highest. They are the Sierra Luquillo, and their highest peak is El Yunque (Joon-kay), the anvil, which is perhaps 3,300 feet above sea level.



PORTO RICANS OF THE POORER CLASSES, HUCARES.

The vegetation of the island is very rich and tropical in aspect.

On the coastal plain are shrubs and bushes of various kinds and many herbaceous plants and vines. Leguminous plants of many kinds are very abundant, including vines, shrubs and large trees. One of the prettiest and most attractive features is the great number of beautiful spreading trees of the order *Leguminosæ*, which border the military road or which are seen on the plazas of the cities and towns.

In the mountains, where the ground is not cultivated, is a dense chaparral of vines, bushes and herbaceous plants. The only really virgin forest is on El Yunque where the palms, tree-ferns, climbing vines, and great numbers of tillandsias, orchids and other epiphytes make a bit of real tropical forest—the only one of easy access in the United States. It would be a splendid thing for the government to do to set this aside as El Yunque National Park. On this mountain are several species of hard-wood trees, 60 to 100 feet high and three to five feet in diameter. But the tree-ferns, the palms, the ceiba trees and the epiphytes impressed me most.

The products of Porto Rico are almost wholly agricultural; the soils everywhere very fertile and susceptible of cultivation. The principal products are coffee, sugar, tobacco, cocoanuts, cattle, bananas and oranges. Not much attention is given to anything but coffee, cane and tobacco. There are on the island 361 large and 4,184 small coffee farms, 433 sugar estates, 66 tobacco farms and about 17,000 small fruit farms. The land, as a rule, is divided up into many small, independent holdings. Not much attention is paid to cocoanut, banana and orange culture, and I believe it is along these lines that the greatest development will take place. There are but few orange orchards on the island, and there is said not to be a single budded tree. Yet the Porto Rican orange is the sweetest, juiciest orange I have ever eaten, and they can be bought on the island at nine to forty cents per hundred. In my judgment, oranges, cocoanuts, bananas and small fruits offer the best inducement for the investment of American capital in Porto Rico.

The winter climate of Porto Rico is delightful. During my stay of two months (January and February) about the island the temperature varied scarcely more than five degrees in the shade. On board the ship it varied from 79° to 85°. In the summer the temperature is only 5° or 10° higher. In the mountains of the interior it is, of course, somewhat cooler, but frost is never



THE SUBURBS OF AGUADILLA.

known. There is a wet season, from August to December, though rains may occur at any time. There are also a wet and dry side of the island, the wet side being the north. While at San Juan in January, although the dry season, one or more showers occurred each day. During February, while on the south side, not a single shower occurred. While the thermometer does not indicate a high temperature in the shade, it is quite hot in the sun. One soon takes on the customs of the natives, and is content to remain inactive in the shade.

The facilities for getting about over Porto Rico are not good. The only good wagon roads are the so-called military roads. The most important of these runs from San Juan entirely across the island to Ponce, a distance of about eighty-one miles. A branch of this road runs from Caycy to Guayama, seventeen miles; another runs from San Juan to Rio Grande, twenty-eight miles. These are the best roads I have ever seen. They are excellent in every way. They are well built macadam, and are kept in superb condition. They are broad, smooth as a floor, with paved gutter on each side, and shaded by long rows of beautiful trees. A drive over this road from San Juan to Ponce with a side-trip from Caycy to Guayama is one of the most delightful that can be imagined.

Away from the military highways roads are of the poorest kind imaginable or are wholly wanting,—even the best of them are scarcely passable in the wet season. Many



EL MORRO AT SAN JUAN.

large districts are entirely without wagon roads and their only means of communication with the rest of the island is by bridle-paths which are none of the best. What Porto Rico most needs is good roads. They will do more than any other one thing to better the condition of the island and uplift the people.



TYPICAL HOUSES OF THE POORER CLASS, PUERTO REAL.

There are about 140 miles of railroad, narrow-gauge, primitive and poorly equipped. These run along close to the coast and are part of a system at one time projected to form a belt line entirely around the island.

The population of Porto Rico is more than 800,000, or 222 to the square mile. This shows a density far exceeding that of the United States. That of Indiana is but seventy-two to the square mile.

The people are white, colored or black, the white and colored being in the majority. The whites are chiefly Spaniards or descendants of Spaniards who settled in the island in its early days. They constitute the cultured planter and business class of the island. They have good homes and live in comparative comfort. The great mass of the population, however, have but little education, little or no property and live poorly indeed, if judged by our standards. They are happy and lazily contented. Their wants are few and easily supplied. In a climate such as theirs the necessities of life are few; in fact, they are only three,—air, food, and water. The first and last cost nothing. Food is a necessity, but any considerable variety is not. Bananas or plantains and yams furnish the necessary food and are cheap. Shelter and clothing are luxuries which are usually reduced to a minimum cost, or even sometimes entirely dispensed with. But there is scarcely one so poor as not to indulge in the luxury of cigarettes and a guitaro. With air, water, and simple food as necessities, and cigarettes and a guitaro as social and æsthetic luxuries, the Porto

Rican of the common classes lives a peaceful and restful existence. He has reduced the problem of the struggle for existence to its lowest terms. Who shall say he is not the true philosopher?

The school system of Porto Rico is elaborate but ineffective. There are no public schools in the sense in which we use the term. They are more like our private schools. Tuition is charged, but the schools are nominally under government supervision. . The girls and boys are taught in separate schools, the girls having women teachers, the boys men. There are no public school houses but the schools are held in private buildings. The group of little girls constituting the girls' school at Aibonito (shown in the illustration) is typical. All shades of color, except real black, were represented in this school. These little girls were bright and knew the catechism much better than some of us ever knew it. The teacher was a bright little woman who seemed really interested in her work, and who, when she learned that I wanted to photograph the school, would not let me proceed with it until she could go into the next room and don a better gown. And when asked to write her name for me she prefixed it with "Professoria."

The treatment which we received in Porto Rico was most cordial. We were everywhere received with the greatest kindness and evidences of friendship and good will. The people are very polite and hospitable. Though the masses are now ignorant they are not hopelessly so. They are anxious for better schools. They are glad they are now a part of the United States. If we send among them honest and intelligent officials they will in a few years make fairly good and desirable citizens.

Commercially, Porto Rico will benefit the United States to some extent, but Porto Rico will be the greater gainer by the new relation. American energy, American capital and American civilization are even now being felt in Porto Rico, and the result can be only for good. The measure of good will depend largely upon the character of the officials our government sends to the islands.

Should you wish to visit Porto Rico go down any time between November and May. Then the climatic conditions are most favorable. There is no more danger to health than here. Fairly good accommodations can be gotten in most of the towns and at reasonable prices. The trip will prove delightful and well worth the making.

U. S. FISH COMMISSION,
WASHINGTON, D. C.

THE PUBLIC SCHOOLS.

By FRANCIS M. STALKER.

I.

THE MEANING OF EDUCATION.

THE idea presented in previous articles is no new one, but it is one which is too little understood by teachers and patrons. It is a thought which must be understood if any rational system of education is to be undertaken. The failure to grasp this simple idea of institutional life is responsible for aimless teaching, lack of organization in school work and education, and for the unfair and sensational criticisms in recent magazines. Institutional life has been a long and steady growth. Social life as we have it to-day is no accident. In its evolution it has made prominent the very needs of the race. It is the embodiment of the instincts and longings of humanity. For this reason if for no other the chief function of education is to unfold to the individual his relation to institutional life.

Education is a life process. Its mission is to bring life more abundant. It is the province of no one institution but of all. Its work is continuous. Its business at all times and under all conditions is to teach better how to live. It accomplishes its work just in the degree in which it unfolds the meaning of life the full swing of which the institutions constitute. They run life's full gamut. They reach from the finite to the infinite, from space to spirit, from the human to the divine. He will be best educated who comprehends most fully this range of life.

The chief factors in education are the individual and social life and the process is one of unity. Institutional life is a manifestation of the will side of consciousness in the race. In studying the problem of education, however, it must be remembered that there are two other phases to be taken into consideration. In its long growth the race has gotten together something besides institutions. There is truth and beauty in the world. What of truth humanity has discovered and systematized is called science. What of beauty humanity has felt and clothed on again in sensuous form is called art. Each of these is essential in education. If institutional life is at core will, self, character and represents goodness in the world, it would be meaningless and empty in the absence of truth and beauty. If the end of education is the unity of the individual with the larger self or life, the means by which this unity is accomplished are science and art, and the complete personality must possess truth, beauty and goodness. These traits as inherent in consciousness furnish the ground for the legitimate lines along which the process of education may proceed. With this thought as a point of departure a future article may deal with the course of study. In this article let us hold to the idea of the unity of self as individual with the larger or social self.

II.

STAGES IN EDUCATION.

The education of the individual may be looked at in different ways. It may be said to fall into three stages: first, it may be said to be academic or general; second, it may be said to be special during the period devoted to obtaining one's trade or vocation; third, it may cover the period of actual experience in the university of life. Or education may be said to fall into two stages—that during which one is wholly directed by others, and that during which one controls his own movements. Education is always unconscious and conscious—that is, we learn in life unconsciously and consciously, and it would be difficult to say which brings the larger knowledge or exerts the larger influence. The subtle silent influences in life cannot be measured. While it is true that from the earliest moment in life one feels the influence of each and every institution there is a sense in which institutional life is rather closely differentiated. In the evolution of the institutions the school came last but in the life of the child it is the second influence. The home and the school may cover that stage of education in one's life in which he is directed largely by others and in which he is learning principles and relations by living them. Indeed, a child cannot learn relations abstractly. The other three institutions may constitute the second stage of education during which one is self-directive. It may be shown, however, that while there are these two periods more or less distinct in each life, at the same time each institution marks a stage of its own in comprehending the meaning of life. Again each institution may be said to include all the others. The home anticipates all the others directing them in every movement. The school is expected to give bent to character in the direction emphasized by the principle of each of the other institutions. It is in this sense the embodiment of them all. It should be all in miniature. It holds the reins to all and drives them four abreast. It deals with the soul while it still needs direction and before it knows the ways of life. It is expected to teach the principles of life and the relations of institutions not abstractly, but as it were unconsciously and so skilfully that the child will take them upon himself unawares, make them a part of himself, and not depart from them. No more difficult task was ever set. No problem demands more intelligence and larger insight. No work is more serious, and at the same time demands more cheerfulness, more of the milk of human kindness, more light, more tact, more common sense, larger understanding of social life, more special preparation, more patience in execution, more unbounded faith. And no problem offers larger opportunity and is half so worthy of the best there is in men. All this is beginning to be recognized. While each of the institutions in actual life teaches new truth and higher conception of one's destiny, it is so dependent upon these earlier influences that if the home and school do their work well it may be left to take care of itself with no fear of the outcome.

III.

THE HOME AND THE COMMUNITY.

The family as the first institution nourishes the child and ministers to its wants. The very principle of the family and history of its origin and growth hint its duties. It

takes the first steps toward introducing the individual to that larger life it is to enjoy. It drills him in his first lesson of living for others instead of self. It teaches unconsciously the sacred relations of home and the necessity of maintaining it on a high plane. The home tie made deep and abiding is not a sign of effeminacy but a tower of strength to any people. The substitution of barracks and black broth for home life was the destruction of the Spartans. The Phœnicians in sacrificing home to commerce cast out of their lives one of the essentials to greatness. The seemingly growing disregard for the sanctity of the marriage tie which the ease for divorces encourages can be checked by better home-life, and the nourishment of a healthier sentiment in this direction lies in the province of the family. The wisely ordered family understands these things, and understands its own functions and relations to life. It understands the slow stages by which the child comes into its ethical self, and it also understands the value of example on the part of the parent and the value of imitation on the part of the child in this process. It supplements good example by wise and timely suggestion on the positive side instead of the negative. It is fertile in resources and can say "let's do this" seventy times seven if need be. Keeping its eye on the whole of life it does everything it can to emphasize the home tie, and everything it can to prepare the child for its larger duties. To these ends it teaches correct oral speech, cleanliness of person, respect for others' rights, reverence, obedience, promptness, truthfulness, honor, politeness. These it has the child live from day to day and form as habits.

Of course the home work will be measured by the means it has for accomplishing its duties. It is a barren home where truth and beauty do not abide. Indeed this is true of all the institutions. This is a thought that has been overlooked in education and life. It is a simple truth that has been neglected too long in the attempts that have been made to better the conditions of humanity. Students of social life are now emphasizing the necessity of first placing the poorer classes in better quarters before any larger life can be hoped for. In many cities municipal reform has begun by completely destroying whole blocks of wretched, filthy, crowded tenement houses, and erecting in their stead wholesome cleanly houses. This plan has worked wonders. The very presence of better houses, cleaner streets, grass plots, better food and clothes makes humanity look up instead of down. Good clothes that fit make a man walk straighter and enable him to look his fellows in the eye. Under such circumstances new life is taken on unconsciously. The home then will fulfill its mission in the degree in which it has tools to work with. Gardens and flowers and green grass, pure water, painted houses with clean floors, bright carpets and good furniture, pictures and books and music make for righteousness. There is an unconscious tuition in these things and truth and beauty may be made epidemic in any community.

'Bus'nis is bus'nis' ain't part of the golden rule, I allow, but the way it gen'ally runs, fur's I've found out, is, 'Do unto the other feller the way he'd like to do unto you, an' do it fust.'—*David Harum.*

THE KINDERGARTEN SPIRIT.

By LOIS G. HUFFORD.

IN considering the true function of the kindergarten, and the problem of its harmonious coordination with the primary school, the observer encounters, on the one side, the zeal without discretion of literal formalism among kindergartners themselves; and on the other, the dogmatic prejudice of long-established custom. Here, as everywhere, "the letter killeth; the spirit maketh alive." To be a true follower of Froebel in practice one must, like that great educator, get a complete, all-rounded view of the scope and function of education itself, and a clear-sighted, philosophic knowledge of child-nature.

A distinguished exponent of the kindergarten spirit, Mrs. Kate Douglas Wiggin, has said: "The kindergarten is more liable

to abuse than any other department of teaching. That kindergarten which is not inspired by Froebel's spirit stands out in sickening relief as a warning example of the wretched results to which the idea may be carried in the hands of a machinist. But the difference between primary schools is just as great, only unfortunately, we have become used to it, and the kindergarten being 'under fire,' so to speak, must be absolutely ideal in its perfection, or it is ruthlessly held up to scorn."

PURPOSE OF EDUCATION.

DeQuincy's well-known discrimination of literature into "literature of knowledge, and literature of power," may be fittingly employed in characterizing the two ideas concerning education itself; the one accounting it to consist in a large store of knowledge of facts; the other measuring its value by the degree of power attained by the child.

While I would, in nowise, underrate the worth of fact-knowlege as a means, I think that all judicious observers must admit that the true end of education is *power*. Such is certainly the view of Froebel, and to this end all his methods were directed. He insisted that the purpose of education is so to develop the three-fold nature of the human being as to secure a harmoniously-acting unity. At each step in the educative process he would apply the test—what measure of power has been developed?

The great teacher denied all unity with those who had, in his name, attempted many wonderful works, but who had not been inspired with his spirit. In a similar manner many have brought reproach upon the kindergarten because they have used the gifts and occupations suggested by its founder without a true insight into the motive of their use, and as a result of such handling their teaching has had a deadening, instead of a vitalizing, effect.

In the kindergarten, as in every other department of education, life means growth; and growth implies keeping pace with the advance of scientific and philosophic discovery in the field of humanity, and skill in adapting such newly-discovered truth by wise modifications of kindergarten methods in the interest of the child's best development. When kindergartners and grade teachers are both controlled by this spirit neither will claim a monopoly of wisdom; mutual misapprehension will be at an end, and the much-to-be-desired harmonious articulation of kindergarten and primary school will arrive.

WHAT IS THE KINDERGARTEN SPIRIT?

In order to bring about this intelligent adjustment a better understanding of the kindergarten spirit on the part of other teachers is essential. Every lover of his kind must rejoice that the closing years of the nineteenth century have witnessed the happy coordination of educative effort throughout the various gradations of school and college. The movement of educational history has been from above down; i. e., whereas the college formerly engrossed the attention of educators, in America at least, its haughty, dictatorial attitude has given place to a sincere desire to adjust its courses and methods to the needs of the preparatory school age; and the secondary school, in its turn, is now seeking to cooperate intelligently with the elementary school. The ideal among educators must be to gain, either by actual participation or by sympathetic observation, a clear understanding of the purpose of every step in the process of education. To 'square the circle' whereby education may be governed by the ideal, the place and purpose of the kindergarten must be clearly apprehended.

First, then, let it be premised that the kindergarten is not a school in the sense that a school is a place for instruction; its purpose is to give the child the development which nature intends in the period between infancy and the usual school age. This includes, in a large degree, a culture of the special senses; also a healthful awakening of the imagination and the moral sense. Incidentally, the child will acquire a goodly stock of ideas and an acquaintance with its environment. In short it will enter school with all its faculties rendered alert and able for ready use. Other things being equal, those who are interested in discovering what are the contents of children's minds on entering school will find that the child who has had the advantage of a true kindergarten is better equipped for taking the next step in its development than if it has not had that experience.

CHARGES ANSWERED.

If it be urged that the testimony of some primary teachers contradicts this conclusion, I answer that either the kindergarten has

missed the application of Froebel's philosophy, or the objector bases her conclusions upon misconceptions of the purpose of education and the function of the kindergarten.

The most frequent accusations against the kindergarten are that it fosters helplessness and lawlessness in the children. As to the first of these charges, it is probably true that the childlike dependence of the kindergarten child upon the providential guidance of the kindergartner seems a weakness to the teacher who has been bred in that American insistence upon the supreme value of self-reliance which does not distinguish between the proper natural dependence of childhood upon the guiding care of its elders, and the power of self-direction acquired as a result of training. Then, again, the large number of children assigned to a single teacher in the primary school making it practically impossible for her to give each child the individual attention that its age demands, naturally causes her to feel some impatience toward that one who, habituated to receiving attentive interest and sympathy, expects the same evidence of loving thought in the school. When the time comes, as come it will, that the primary school is limited to such a number as can receive each its just share of individual attention, we shall no longer hear the teacher who is a lover of childhood complaining of children's want of self-reliance.

In regard to the second charge, that of a disposition to lawlessness, it will be found that it sometimes arises from a mistaken idea of what constitutes order. To the credit of humanity be it said that ability to compel order by physical force is not now demanded as a qualification for teaching. Yet it is still true that most people make stiff rigidity of posture and automaton-like movements the criterion in school discipline; whereas interested and happy activity is the ideal of the kindergarten.

EXPRESSION THE KEY NOTE.

Repression has been for many years the controlling motive of the elementary school; *expression* is the inspiring principle of Froebel's spirit in education—full, free unhampered expression of the whole being. This is not, by any means, synonymous with unrestrained lawlessness. The true kindergartner insists upon the child's obedience to whatever law is necessary to the harmonious life of the whole. Indeed, this is a central principle in Froebel's educational doctrine, viz., that one great purpose in kindergarten and school is to teach the child to live without friction with his fellows. Social unity being an end in education, it follows that, if the child, by wilfulness or perversity disturbs the social harmony, he must be excluded from participation in the work or games in which the others are engaged. So the kindergartner withdraws the perverse child from the circle until he learns that it is for his own happiness to be kind and orderly. Not the arbitrary will of any elder is to govern, but the natural law of social harmony.

Such is, unquestionably, the rational principle to be observed in all school discipline, from the kindergarten to the college; for this it is that develops true self-direction. In the government of the school, as in that of the world, should prevail what the poet who had "gone the whole round of creation" finds to be the key-note of the universe,—"All's love, yet all's law."

Very early in the child's life this priuciple must be impressed. Hence it is that the kindergarten takes great pains to instil the idea of loving service. Self-expression is encouraged, but at the same time, selfish appropriation of the work of the hands is not permitted. Instead it is to be taken home to give happiness to mother and father; or it is to be reserved for a gift at Christmas tide, thus teaching in what consists the intrinsic value of a gift, that "The gift without the giver is bare." For the same reason stories of unselfish knighthood are told and acted out in plays, the service of love in the spirit of the Golden Rule being thus objectively en-forced.

SYMMETRICAL GROWTH.

Remembering that the "whole child goes to school," the kindergarten seeks to develop the entire being, moral and physical, as well as mental. The kindergarten endeavors to correct a mistake of the past, which was, as a prominent educator has said, "to destroy the formative and creative interest by making the pupil passive instead of active, receptive instead of executive."

The kindergarten education does not regard the child as a vessel which is merely to hold what is poured into it; nor as a piece of wax to be shaped by the arbitrary will of others, but as a self-active being which is to be aided in attaining its com-

plete, natural development. To this end it must "learn to do by doing;" it must be allowed free self-expression under intelligent and loving guidance; its individuality must be respected and encouraged, while, at the same time, it must be brought into harmonious cooperation with its fellows, and the spiritual nature must be nourished into purity and power.

The kindergarten spirit has already pervaded our entire educational system. The study of child nature through its progressive evolution has wrought a gradual revolution in ideas and methods. Mutual friendliness is superseding the former prevalent antagonism between teacher and pupil. Scholasticism as an educational ideal is giving place to an all-round training of hand and brain and heart and soul. For the educational world is adopting as its motive principle the teaching of Froebel, that "The fulfillment of man's destiny is the representation of the divine nature within him."

INDIANAPOLIS HIGH SCHOOL.

NATURE STUDY—TREES.

By D. W. DENNIS.

THE trees, the forests, are the most striking things in our middle-west. The race doubtless studied trees among the first of its nature studies. No other plants are more useful to man or useful in a greater variety of ways than trees; trees are equally accessible to children of the city or country schools and they may be studied with profit at all times of the year. Every student has more or less knowledge of trees upon which to build when he enters school, and however much he may know about them there is still far more that he can learn. Forests offer the best opportunity we have for studying mass life; all these are reasons why trees are objects as suitable for nature study as any that could be selected.

A DISCLAIMER.

Nature study might as well be given up in any school in which the teacher has not a good knowledge of the subject-matter and a consequent abiding interest in the subject unless he can and will attain these necessary things. I have heard excellent musicians say that any teacher, whether he can sing or not, can nevertheless teach children to sing; but if this is true of music about which I know nothing, I am still compelled to think it is not true of any subject with which I am acquainted.

THE FIRST ESSENTIAL.

The teacher who undertakes to carry out the suggestions in this paper must know the trees at sight that grow in his neighborhood, or he must learn to know them with his pupils. He should be able to recognize them as far as possible by their appearance at a distance, by their leaves, flowers, bark, wood, and fruit; every child in school will be eager for and will get this knowledge if the teacher has it. Kindergarten fashion, a game lasting the whole year can be played —"who can tell the most trees in the greatest number of ways." The common names will answer every purpose; but, as I have elsewhere argued, all serious objections to scientific names will vanish when they are used as names merely instead of being hunted for as goals and regarded as wisdom when found.

Before the teacher has gained the knowledge here indicated he will have acquired the necessary interest in the subject.

How shall the teacher gain this knowledge? He may get it in any way he can; he may ask any one who knows—farmer, nurseryman, professor or carpenter; he may attend a summer school, college or university, or he may buy a copy of Apgar's *Trees of the Northern United States*, a little book published by the American Book Co., which costs fifty-five cents, and study its key and glossary until he can find the name of any tree. The key in this book is wholly artificial; but it has one merit which, for the purposes here urged, overrides all objections —it enables any teacher who tries, to find the names of the trees.

NAMES IMPORTANT.

I am quite aware that it is orthodox, even fashionable, nowadays, to maintain that the names are not important; but children are "prone to evil" and the first question they ask is, what tree is that? and they will do all sorts of important things for the teacher who can answer. The child must not be worried with this key—the teacher must use it to determine the name of the tree; it then becomes one of his acquaintances, the child is another, and he introduces them. Association follows the new acquaintance, and the child may learn anything about the tree that does not do violence to his mental development—its uses, its parts, its habitat, its life history, the plants which resemble it, its mode of branching, the shape and arrangement of its leaves, why they are flat or needle-shaped, why they are lobed, what they do for the tree, when it blooms, when its fruit ripens, etc.

SEEDS.

It may be assumed that an oak and maple are in easy reach of every teacher and pupil in the state. Let a pint or more of the seed of the maple—its double samora—be gathered. Let a boy throw a handful of them from a height of some thirty feet—the top of the schoolhouse or a second or third-story window—when a breeze is blowing. Every one who sees will be surprised and delighted; the seeds will hover and flutter and whirl and sail in the air as if they were alive, and the subject of seed scattering will be fairly launched. At the proper season a visit may be made to a fallow field on the east side of a maple forest. It will be seen that young maples are growing at a distance of a quarter to a half mile from the forest. Seeds of the linn may now with the greatest profit be gathered and studied—are they winged? Drop a single one from a height. Are the seeds of the ash winged? of the elm? Where are the seeds of the pine to be found? (Is the crossbill's bill adapted to extracting these?) Are they winged? Some one in the school may know how quickly a pine forest will spring up in an "old field" in North Carolina. How are the seeds sown? Everything in connection with seed-scattering among plants may be introduced in connection with this lesson on the maple. How is the mistletoe planted on the oak? Why do the thistle, the blackhaw, the raspberry, the sticktite, the cocklebur, the Spanish needle, the touch-me-not, the dandelion, the tumbleweed need no help in the struggle for existence. Here again the game can be —"who can find the most seeds with contrivances for scattering them?" Does the walnut have a means of seed-scattering? How is the fern planted at a height of fifty feet on a sheer cliff, as at Turkey Run in Parke county? Would not exercises like these create a demand for collections of the seeds of native plants?

AGE OF TREES.

A cross-section of the largest available oak or other tree may be obtained, smoothed and varnished and its rings of growth counted to determine its age. The rings of growth may then be counted inward from the outside and the particular ring marked which measures the size of the tree at the birth of the various pupils, unless, indeed, there may be objections to this in particular cases; at the inauguration of Lincoln, when Indiana was admitted as a state, at the battle of Yorktown, the landing of the Pilgrims or of Columbus, etc.

The lines radiating from pith to bark, the medulary rays, may be examined on both cross and radial sections, the latter if polished and varnished or dampened will show the effect of quarter-sawed oak; many children will have seen this in railroad cars, pieces of furniture and the finishings of their own homes. This will pave the way to a collection of native woods which should be made when the interest in the subject creates a demand for it.

The child may be led to see the difference between the excurrent branching of the fir tree and the solvent branching of the apple. He should then be led to observe young and old soft maples, and when he has seen that the young have excurrent, and the old solvent branching he will have begun a very important line of observations. Let him answer these and similar questions: Are the very young leaves of all sorts of maples more alike or more unlike than the old leaves of the the same trees? Are very young plants often quite unlike old plants of the same species? (a young maple, for example, when it has but two leaves.) Can you tell the species of a maple or an oak when it is quite young. Does a young fern (when it is a *prothallus*) look more like a fern or a liverwort? Are flowers that are

very irregular equally irregular while they are in the bud?

THE MAPLE AGAIN.

Let the child come back to the maple for the hundredth time for a new lesson: Why does it yield so many seeds?—an estimate may be made of the number of seeds a single tree yields in one year. Why is the maple in such demand for a shadetree? What advantage has the hard maple, and what the soft in this respect? Why does the maple bulk for bulk yield a hotter fire and a richer bed of coals than the poplar or pine? Why has a maple growing alone in a field a different form from one growing in a forest? Has competition for light and air which are only to be had from above in the forest made the maple tall there? Has the fact that it is exposed to the storm in the open field anything to do with its being so low? Has the soil anything to do with the size and value of the oak and maple? Does the tree that has made the largest demands on soil and light and air yield the largest returns to man—the most and best lumber for his home, the finest masts for his ships, or wood for his fire, or fruit for his table, the longest and most refreshing shadow? Are not men like trees in this respect? Do not those make the largest returns to the world who have spent time and money and care preparing for service? Does the same soil yield all varieties of the oak and maple equally well? Where is the strain greatest on the oak or maple when the storm comes? At the ground, of course. And is it not here that it is the strongest? The stump does not split easily. Do trunk and branches yield to the storm and thus escape its fury? How does the gardener produce the many varieties of the maple, cut-leaved, weeping, etc., which he offers for sale? He will be glad to show teacher and school how he does it, and this will lead to a reason why the flower should be carefully studied—why pollen and pistil, ovary, style and stigma, filament and anther are more than words; it will open the way for studying why broom-corn and cane should not be planted close together; why pumpkins and watermelons mix; why white and yellow corn will mix across a road. It will point to one reason why varieties arise in nature. It will lead to the reason why all mulberry trees do not bear, why all maples do not, why all box-elders no not. It will make the words monoecious, dioecious polygamous, etc., necessary, will lead to the essential parts of a flower; it will throw light on Holmes's reference to

> "that lily's gorgeous cup
> That flames in glory for an hour;
> Behold it withering, then look up
> How meek the forest monarch's flower."

The forest monarch is not meek, the wind cross fertilizes it; it has no need of gorgeous cups to attract bees and so does not produce them.

At least one more nature-study paper will be offered to the readers of THE INLAND EDUCATOR on trees, the beautiful, cheery, helpful companions of man,—friends that do not have to be entertained, but which whether we admire their leaves fluttering in the breeze, or read or sleep in their shadows, "clap their hands" above us still, and laughing scatter the same benediction.

EARLHAM COLLEGE.

My experience is that most men's hearts is located ruther closter to their britchis pockets than they are to their breast pockets.—*David Harum.*

THE CRITIC.

A little seed lay in the ground,
And soon began to sprout;
"Now which of all the flowers around,"
It mused, "shall I come out?"

"The lily's face is fair and proud,
But just a trifle cold;
The rose, I think, is rather loud,
And then, it's fashion's old."

"The violet is very well,
But not a flower I'd choose,
Nor yet the Canterbury bell—
I never cared for blues."

"Petunias are by far too bright,
And vulgar flowers beside;
The primrose only blooms at night,
And peonies spread too wide."

And so it criticised each flower,
This supercilious seed;
Until it woke one summer hour,
And found itself a weed.—*Mildred Howells.*

A MESSAGE TO GARCIA.

By ELBERT HUBBARD.

Reprinted from *The Philistine* by special permission of the author and editor.

IN all this Cuban business there is one man stands out on the horizon of my memory like Mars at Perihelion. When war broke out between Spain and the United States, it was very necessary to communicate quickly with the leader of the insurgents. Garcia was somewhere in the mountain fastnesses of Cuba—no one knew where. No mail nor telegraph message could reach him. The president must secure his cooperation, and quickly. What to do!

Some one said to the president, "There's a fellow by the name of Rowan will find Garcia for you, if anybody can."

Rowan was sent for and given a letter to be delivered to Garcia. How "the fellow by the name of Rowan" took the letter, sealed it up in an oil-skin pouch, strapped it over his heart, in four days landed by night off the coast of Cuba from an open boat, disappeared into the jungle, and in three weeks came out on the other side of the island, having traversed a hostile country on foot, and delivered his letter to Garcia, are things I have no special desire now to tell in detail.

The point I wish to make is this: McKinley gave Rowan a letter to be delivered to Garcia; Rowan took the letter and did not ask, "Where is he at?" By the Eternal! there is a man whose form should be cast in deathless bronze and the statue placed in every college of the land. It is not book-learning young men need, nor instruction about this and that, but a stiffening of the vertebræ which will cause them to be loyal to a trust, to act promptly, concentrate their energies: do the thing—"Carry a message to Garcia!" General Garcia is dead now, but there are other Garcias.

No man, who has endeavored to carry out an enterprise where many hands were needed, but has been well nigh appalled at times by the imbecility of the average man—the inability or unwillingness to concentrate on a thing and do it. Slipshod assistance, foolish inattention, dowdy indifference, and half-hearted work seem the rule; and no man succeeds, unless by hook or crook, or threat, he forces or bribes other men to assist him; or mayhap, God in His goodness performs a miracle, and sends Him an Angel of Light for an assistant. You, reader, put this matter to a test: You are sitting now in your office—six clerks are within call. Summon any one and make this request: "Please look in the encyclopedia and make a brief memorandum for me concerning the life of Correggio." Will the clerk quietly say, "Yes, sir," and go do the task? On your life, he will not. He will look at you out of a fishy eye and ask one or more of the following questions:

Who was he? Which encyclopedia? Where is the encyclopedia? Was I hired for that? Don't you mean Bismarck? What's the matter with Charlie doing it? Is he dead? Is there any hurry? Shan't I bring you the book and let you look it up yourself? What do you want to know for?

And I will lay you ten to one that after you have answered the questions, and explained how to find the information, and why you want it, the clerk will go off and get one of the other clerks to help him try to find Garcia—and then come back and tell you there is no such man. Of course I may lose my bet, but according to the law of average, I will not. Now if you are wise you will not bother to explain to your "assistant" that Correggio is indexed under the C's, not in the K's, but you will smile sweetly and say, "Never mind," and go look it up yourself.

And this incapacity for independent action, this moral stupidity, this infirmity of the will, this unwillingness to cheerfully catch hold and lift, are the things that put pure Socialism so far into the future. If men will not act for themselves, what will they do when the benefit of their effort is for all? A first-mate with knotted club seems necessary; and the dread of getting "the bounce" Saturday night, holds many a worker to his place.

Advertise for a stenographer, and nine out of ten who apply, can neither spell

nor punctuate—and do not think it necessary to. Can such a one write a letter to Garcia?

"You see that book-keeper," said the foreman to me in a large factory.

"Yes, what about him?"

"Well, he's a fine accountant, but if I'd send him up town on an errand, he might accomplish the errand all right, and on the other hand, might stop at four saloons on the way, and when he got to Main street, would forget what he had been sent for." Can such a man be entrusted to carry a message to Garcia?

We have recently been hearing much maudlin sympathy expressed for the "down-trodden denizen of the sweat-shop" and the "homeless wanderer searching for honest employment," and with it all often go many hard words for the men in power.

Nothing is said about the employer who grows old before his time in a vain attempt to get frowsy ne'er-do-wells to do intelligent work; and his long patient striving with "help" that does nothing but loaf when his back is turned. In every store and factory there is a constant weeding-out process going on. The employer is constantly sending away "help" that have shown their incapacity to further the interests of the business, and others are being taken on. No matter how good times are, this sorting continues, only if times are hard and work is scarce, the sorting is done finer—but out and forever out, the incompetent and unworthy go. It is the survival of the fittest. Self-interest prompts every employer to keep the best—those who can carry a message to Garcia.

I know one man of really brilliant parts who has not the ability to manage a business of his own, and yet who is absolutely worthless to any one else, because he carries with him constantly the insane suspicion that his employer is oppressing, or intending to oppress him. He cannot give orders; and he will not receive them. Should a message be given him to take to Garcia, his answer would probably be, "Take it yourself."

To-night this man walks the streets looking for work, the wind whistling through his threadbare coat. No one who knows him dare employ him, for he is a regular fire-brand of discontent. He is impervious to reason, and the only thing that can impress him is the toe of a thick-soled No. 9 boot.

Of course I know that one so morally deformed is no less to be pitied than a physical cripple; but in our pitying, let us drop a tear, too, for the men who are striving to carry on a great enterprise, whose working hours are not limited by the whistle, and whose hair is fast turning white through the struggle to hold in line dowdy indifference, slip-shod imbecility, and the heartless ingratitude, which, but for their enterprise, would be both hungry and homeless.

Have I put the matter too strongly? Possibly I have; but when all the world has gone a-slumming I wish to speak a word of sympathy for the man who succeeds—the man who, against great odds, has directed the efforts of others, and having succeeded, finds there's nothing in it; nothing but bare board and clothes.

I have carried a dinner pail and worked for day's wages, and I have also been an employer of labor, and I know there is something to be said on both sides. There is no excellence, per se, in poverty; rags are no recommendation; and all employers are not rapacious and high-handed, any more than all poor men are virtuous.

My heart goes out to the man who does his work when the "boss" is away, as well as when he is at home. And the man who, when given a letter for Garcia, quietly takes the missive, without asking any idiotic questions, and with no lurking intention of chucking it into the nearest sewer, or of doing aught else but deliver it, never gets "laid off," nor has to go on a strike for higher wages. Civilization is one long anxious search for just such individuals. Anything such a man asks shall be granted; his kind is so rare that no employer can afford to let him go. He is wanted in every city, town and village—in every office, shop, store and factory. The world cries out for such; he is needed, and needed badly—the man who can carry a message to Garcia.

HOW TO USE THE NEW GEOGRAPHIES.

By CHARLES R. DRYER.

IN a review of Frye's *Primary Geography* in the INLAND EDUCATOR for August, 1895, the writer said:

"The book seems to be constructed upon the obvious principle that the best source of real knowledge of a thing is the thing itself, and the next best is a good picture of it. An eminent teacher quoted by Redway says: 'If I were to choose between two elementary text-books of geography, one of which was all text and no pictures, and another all pictures and no text, I should undoubtedly choose the latter, *if the pictures were true to nature.*' . . . The opening section on home geography deals with those simple, fundamental elements which the child can find and see for himself in any locality, and which form a part of every region on the face of the earth."

We have in the schools of Indiana, at last, a text-book which begins (page 2) with a question —a question which cannot be answered from the book itself, a question which calls the attention of the child, not to something remote and unrelated, but to that portion of the "wide, beautiful, wonderful world" in which he lives and moves and has his being; not to something in the schoolroom, not to the town or shop or factory, the county or state, but to the open book of nature, to the kindly face of the earth out of doors all around him,—"Is there any level land near your school?" This is the key note of the first twenty pages of the book, which aim to open the child's eyes to common things, to universal features and processes, and to lay a foundation of realistic knowledge acquired by experience.

The teacher may ignore all this and set the child a task of committing to memory words, sentences, definitions; but he will find that the book does not lend itself readily to that kind of work, it will not be a success in that line, and the child will miss the advantages wherein this book is superior to the old-time texts.

The book evidently means that serious work shall be done in the field and laboratory, and furnishes the teacher at once with the material and the method. The incidental experience of the pupil is to be made use of, and to be supplemented and organized by systematic observation and experiment under the direction of the book and the teacher. The idea first developed is that of *relief*, or variations of level, as seen in hills, valleys and slopes. Immediately connected with this is the idea of running water in relation to elevation and slope, as seen in brooks, rivers, rapids, ponds, and lakes. No attempt should be made to treat the topics of sections two, three and four separately. Let the class go out into the field and take in whatever comes in their way. In many districts of Indiana it will be difficult to find a real hill, but valleys and slopes are present everywhere, although often upon a small scale. If the teacher makes up his mind beforehand that there is nothing in his neighborhood worth looking at, the work is foredoomed to failure. If he goes out with open eyes and open mind, determined to find and make the most of whatever his field has to offer, success is certain. The field accessible to city children and teachers is often as favorable as that of country schools. Large towns are often situated upon large streams which furnish all the features required for study; they contain parks and cemeteries located upon the most irregular and picturesque surfaces, and means of transportation to these places are convenient and inexpensive. If there is an area of hills and woods, or a body of navigable water near a town, it is almost sure to be used as a pleasure resort and consequently easily accessible. If it be the teacher's first experience of a field excursion with a class, it will be something like the first plunge in the ocean; but everyone comes out of it surprised and invigorated. Attention should be confined as closely as possible to the definite features to be studied,—*hills, valleys, slopes, and their relation to running water;* but the opportunity need not be lost to collect and take home material for the study of the next topic, *the kinds of soil.*

The children should be encouraged to do as much collection of material as possible, but the teacher must see to it that he has at hand the very best specimens for his purpose. The children will probably contribute an abundance of soil, but much of it may consist of mixtures unsuitable for beginners to study. Let the teacher provide a sufficient quantity of pure, clean sand, of pure clay and of loam which is an indefinite mixture of clay, sand, and humus or decayed vegetable matter. Set every child at work upon a specimen of sand to learn as much as he can about it by the use of all his senses, sight, feeling, smell, taste, and help him to express what he perceives in clear and definite language. He will probably discover that sand is composed of hard, sharp, loose grains, without odor or taste, that water passes through it freely without becoming muddy, but he will be unable without

help to tell what he perceives. This is the teacher's opportunity to give a practical language lesson with the geography lesson. Clay should be studied in the same way and compared with the sand. It will be found to be composed of an extremely fine soft powder, like flour, which becomes sticky and plastic when wet, and can be moulded into any form which it retains when dry. A magnifying glass will add greatly to the interest and profit of the work by showing the shape, color and relative sizes of the sand grains. It requires a very good microscope to show the separate grains of clay. Loam can be shown to be a mixture by shaking it up in a tall bottle of water and letting it stand. The sand will settle quickly while the clay will render the water turbid and take a long time to settle. This point is brought out in section nine which may be introduced here. The chief evidence of the presence of vegetable matter in soil is the dark color. If a specimen of black peat or muck from a swamp can be obtained it will help to make this point clear. The children should be sent to look into freshly dug trenches, cellars, or postholes, or to dig for themselves and to notice the dark color of the upper layer and how the earth is stained farther down by the decay of roots and by the soaking down of rain-water.

Section six is a lesson upon the relation between soil and running water, and assumes that the teacher will take advantage of a rainstorm to teach in a realistic manner the fundamental facts of transportation and erosion. The central idea is the all-important one that the streams are tearing down and carrying away the land, and as a subordinate process incidental to the main one, the streams are assorting the material, depositing the sand in one place and the clay or mud in another. If no rainstorm occurs at the right time, these processes may be observed in any stream at any time by stirring up the sand and mud or by throwing earth into the stream. As a makeshift a pile of dirt and a sprinkling pot is not to be despised. A great variety of good work can be done with them in a simple and easy manner.

As an appendix to this topic directions are given for keeping a simple weather record. This is started thus early in order to call the attention of the children to weather changes, to get them into the habit of regular and systematic observation and to accumulate a mass of data for future study.

Section seven is said in a footnote to be "home work for pupils who wish to try the experiment," but there is no reason why it should not be done at school by all the pupils. The lesson is an important one and brings out the fact that all the rainfall does not run off in the streams, but that a large portion sinks into the earth. It introduces the idea of ground-water and is a necessary preparation for section eight. The fact of ground-water may be still further impressed by noting that in fresh excavations the earth is always damp, that water is obtained by digging wells, that it flows into mines, etc.

Section eight presents two topics,—the relation of ground-water to the growth of plants, and the work of worms and ants in enriching the soil. The latter has no special connection with the former and is not well presented. Perhaps it was introduced here as *an interest stimulator*, according to the doctrine that earth and water are much less interesting to children than animals. It may be omitted without serious loss.

Sections ten and eleven continue and expand the topic of section six, the work of streams in tearing down the land, assorting the material and depositing it in lakes and seas. One sentence must be guarded against lest it give a wrong impression: "Thus, water wears down the high land and *so makes the slopes more even.*" The first effect of stream erosion is to make the land surface more rough and uneven; it is only in the last stages, after the work has gone on nearly to completion that a smoother surface is produced.

This completes one-half of a cycle of processes dependent upon water. The rain has been traced from its fall upon the land to the sea, and the work it does while on the way has been briefly studied. Sections twelve and thirteen take up the other half of the cycle of the raindrop and lead the pupil to see where the rain comes from, tracing it from the sea through the air back to the highlands. The experimental work prescribed is simple, clear and sufficient. (Is there any teacher in Indiana so blind or indolent or careless as to omit the experiments and trust wholly to the text and pictures?) Four points are to be especially looked after: First, that *the heat in the water*, and nothing else, makes it evaporate; second, that the vapor is invisible; third, that cooling changes the vapor back to water; fourth, that the air has nothing to do either with the evaporation or with holding the vapor. The water would evaporate faster if there were no air, and a cubic foot of space would hold as much vapor. The air *contains* vapor but does not *hold* or sustain it. The vapor which can run a steam-engine is perfectly competent to sustain itself. The causes of the cooling of water-vapor in the air are too difficult to be understood by primary pupils.

Sections fourteen to twenty-two take up, again, the work of streams and the features of stream basins, and are illustrated with many good pictures. Pictures can be used to great advantage but they can never take the place of the real things. Practically all the important features of any great river system may be found along any little brook, displayed upon a small scale, but all the better for teaching children on that account. The place to begin this work and to develop the ideas of basin, system, valley, slope, divide, watershed, rapid, cataract, gorge, canyon,flood plain, delta, is in the field along the course of the nearest stream. When these ideas have been clearly formed and firmly fixed by direct sense perception, the child is prepared to understand and profit by the text and pictures, and *not till then*. The introduction of the map of the Mississippi System on page eight is premature and useless. The pupils have no basis for understanding a map, and would see nothing in it but a curious pattern of crooked lines. The picture of a divide on the same page is hardly a success and may well be disregarded. The panoramic view on page nine is more valuable. The text fails to bring out clearly one important distinction,—that between a stream basin and a stream valley. "All the land that sends water to a brook forms the *basin* of the brook;" but the *valley* is only the trench which the stream has cut into the land, and is bounded by the banks or bluffs. Popular usage adds to the confusion here. Two-thirds of Indiana lies in the Wabash basin, but only a strip from one to ten miles wide along the river lies in the Wabash valley.

Section twenty deals with the subject of *weathering* or rock decay. This may be seen upon the face of any cliff or the surface of any pebble. *Frost* in this section is used in the sense of freezing water. Section twenty-one discusses *corrasion* or the mechanical wearing and grinding of sediment carried by streams. Cheap marbles are made by rolling pieces of limestone in a barrel of water.

Section twenty-three treats the difficult subject of mountains for the most part with skill. Many pictures are given but no definition. It will be well for teacher and pupils not to attempt to frame a definition; it is needless and impossible. The only definition attempted in the text, "a row of mountains is called a mountain range," is a failure. As may be seen in the picture cited, a mountain range is not a row of separate mountains (such a thing does not exist), but a long, high ridge with sharp or rounded peaks upon its crest. Single mountains standing alone, like Vesuvius, are always volcanic.

Sections twenty-four and twenty-six, on shore forms, are more difficult because such features are unfamiliar to us inland people, and we cannot find their representatives for direct observation. Islands, peninsulas, capes, bays, etc., can, however, be found or made in any little pond or pool, and the shifting of shore lines can be seen by varying the depth of water. The most important fact in this connection is that any change in the level of the water changes the outline of the land masses, and that the form of islands, continents, etc., depends upon their slopes and the height of the water surface. The pictures on pages fifteen and seventeen may be used here to great advantage.

The work upon the points of the compass in section twenty-seven will be much more interesting and effective if done out of doors. The child may easily learn the directions in the vicinity of his home and school, but that he may be able to orient himself anywhere and not "get turned around," the teacher should show him how to find and recognize the Great Dipper and the north star. If the streets and buildings happen not to stand "square with the compass," it will be necessary to mark out a north and south line in the yard; this is well worth doing in any case, and if the line is measured exactly fifty or one hundred feet long, it will serve as a unit for estimating distance.

The nature and use of maps are skillfully presented in sections twenty-eight and twenty-nine.

Too much emphasis cannot be laid upon the necessity of doing this work carefully and thoroughly. The teacher need not fear that the child will learn maps instead of the earth, any more than he fears that in learning to read a printed page the child will learn letters instead of ideas. The map is one of the most efficient means of expression ever devised and is far less arbitrary and artificial than print. If at the end of the first year the pupils are able to interpret readily and correctly a simple map, a very satisfactory beginning has been made in the study of geography.

If the fundamental, realistic work laid out in this opening chapter on home geography seems to any teacher new, strange and doubtful, there is only one way to settle, once for all, the question of its value, and that is *to try it*.

Ev'ry hoss c'n do a thing better 'n' spryer if he's ben broke to it as a colt.—*David Harum.*

ALCOHOLIC BEVERAGES.

By J. T. SCOVELL.

II.

ETHYL ALCOHOL, undiluted, is an active poison destructive to both vegetable and animal life. Dr. Norman Kerr of London says, "A large dose of strong alcoholic liquor acts as a narcotic poison on the nerve centers, and causes death by coma." Again he says, "Alcohol is an irritant narcotic paralysant, exerting a caustic action on the tissues. It has long been a matter of observation that the man or woman who has a paroxysm of intoxication for a day or two once a month, preserving his constitution entirely free from the toxic influence of alcohol in the abstaining intervals, does less injury to the body and brain by alcoholic toxicity than the steady free drinker, who, with his four or five daily doses, keeps his whole system continuously under the toxic influence."

"Saturating the blood with the poison daily for a series of years is more detrimental to the human constitution than periodic drunken bouts, providing the interval of abstention from the toxic agent be prolonged enough to enable the system to get rid of the toxic injuries."

"This non-alcoholic interval, to be effective, must last for at least three months, and even then the poisoning of the nervous fluid will not have been absolutely recovered from."

The wide-reaching and deplorable effects of alcoholic liquors upon the body and mind can hardly be exaggerated. But these effects are not the result of active irritant caustic poisons. Pure alcohol is an active poison. So is sulphuric acid; but they do little or no harm, their irritant caustic action prevents their use; they are comparatively harmless. Alcoholic beverages are not active irritant caustic poisons, but rather pleasant, agreeable stimulants, like wine that "maketh glad the heart of man," a beverage fit for the gods. They soothe pain, mitigate suffering, quiet fears, remove obstacles, inspire hope and eventually all is shadowed in the forgetfulness of sleep, "balmy sleep," "that knits up the raveled sleeve of care."

The common idea of a caustic poison is that it quickly kills tissue and destroys life. Dr. Kerr and others say that the effects of alcoholic liquors, even when profound, may be recovered from. In general, even in severe cases there is no disintegration of tissue; changes occur, the action has been abnormal but not destructive, the changes have all been within the sphere of recovery. The disastrous effects of alcoholic liquors are not due to one dose even though that be a large one; not to an occasional spree or debauch, though they may be prolonged, but to such steady continuous drinking as does not allow the tissues and organs at any time to recover their normal tone and vigor.

Alcoholic beverages hinder or restrain the activity of nerve tissue; under their influence the action of mind and muscle becomes sluggish. People generally have called such action toxic, and such beverages intoxicants. But with a clearer knowledge of the real nature of the action it is beginning to be called anesthetic.

Pure alcohol or strong liquor may destroy life, but alcoholic liquor of a strength up to 12 or 14 per cent. allows of the growth of the yeast cell. The process of fermentation goes on vigorously until the mash contains nearly or quite 12 per cent. of alcohol, when the action becomes sluggish, ceasing altogether as this mass reaches a strength of 14 per cent. In general alcoholic liquors of less than 12 per cent. are not only not harmful but may be beneficial to many different forms of life.

Many physiologists teach that alcohol, in dilute form, may be taken at meals, in moderation, not only without harm, but with well marked benefits. Professor W. O. Atwater of Wesleyan University has made some very elaborate experiments upon the nutritive value or effect of alcohol. Pure alcohol was administered with water or coffee. The amount per day was equal to 2½ ounces of absolute alcohol, about as much as would be contained in three average glasses of whiskey or in a bottle of claret or Rhine wine. This was divided into six doses, and three were taken with meals and three between meals. "Three important results were observed: First, extremely little alcohol was given off from the body, it was oxidized or burned as completely as bread, meat or any other food. Second, in the oxidization, all the potential energy of the alcohol was transformed into heat and muscular power, as in the case of starch, sugar and other ordinary food materials. Third, the alcohol protected the body material from consumption as effectively as the corresponding amounts of sugar and starch." Some food, like lean meat, white of an egg, etc., serve to form tissue; others, as fat, sugar and starch, serve as fuel. "Alcohol is similar to the fats, starch and sugar in this respect. It cannot build tissue but

it does yield energy. It cannot repair the bodily machine as it is worked out but it can and does serve as a fuel. Alcohol differs from starch and sugar and fats in that it is more easily and immediately available to the body because it does not require digestion. It is not stored in the body for future use, as is the case with the nutrients of ordinary food materials. If large amounts are taken the influence upon the brain and nerves is such as to counteract its nutritive effect so that it becomes injurious."

"In large quantities alcohol certainly is a poison, but the same is true of tea and coffee. Hydrochloric acid is formed in the stomach and is indispensable for gastric digestion, and yet if swallowed even in small quantity would be a violent poison. The peptone which is formed from food in ordinary digestion is a poison if taken directly into the blood. But we do not call tea, peptone and hydrochloric acid poisons when taken in moderation and used in normal ways in the body. So alcohol used in quantities and ways which cause no injurious effects cannot properly be called a poison."

"Many who are earnestly interested in temperance reform, feel it necessary to insist that alcohol is not a food but a poison, that in any quantity large or small it is necessarily harmful and not useful. These theories are based in part upon the results of experiments made years ago by imperfect methods, and since shown to be incorrect. They are directly opposed to the results of the latest and most reliable research and to the consensus of the leading authorities the world over."

As Professor Atwater says, these ideas are not new. He has simply verified them under favorable conditions, and restated them in a clear and convincing form. Fermented liquors allowing the growth of the yeast cell certainly are not poisons in the ordinary meaning of that term, and alcoholic beverages used temperately are foods not poisons. Dr. Kerr, who calls alcoholic liquors active irritant poisons, in discussing the treatment of alcoholism is continually talking of recovery from the effects of alcohol, even when the influence has been profound, following a prolonged and intemperate use of it. Such recoveries seem hardly compatible with the idea of active poisons. From the standpoint of the physiologist alcoholic beverages used temperately are not poisons. They may not be typical foods, they may not be necessary foods, but used in moderation they may be useful.

In a sense alcoholic beverages are poisons, not irritant but quieting, not caustic but soothing. When we consider their effects the term poison does not seem too strong, it would be difficult to find a term strong enough, to express the powerful influence which the intemperate use of such beverages has exerted upon the human race. But we will be able to get a truer idea, a clearer understanding of the whole matter, if we think of alcoholic beverages as gently, quietly but firmly restraining or repressing the activities of brain and muscle, of tissue and organ of mind and body; if we think of them as exerting, in a general way, an anesthetic influence.

Professor Atwater and others have shown that alcohol, in moderate quantities, is a food, much like sugar or starch. This fact is not surprising, for alcohol is formed from starch and is made up of the same chemical elements. Alcohol seems to be starch that has been digested by artificial processes so that it is immediately available for use in the body.

In general we cook food and prepare it in various ways so as to make it more palatable and more easily digested. But in the case of alcohol, digestion itself seems to have been well nigh completed. Alcohol may serve as a food, but is it a natural, a normal food? Ordinary foods need digestion. Alcohol does not. It requires some time to prepare starch so that it may be useful for nutritive purposes, while alcohol is immediately available. Starch, when fitted for use, yields heat and other forms of energy, without other appreciable effects. Alcohol yields heat and other forms of energy, and in addition, exerts a soothing, an anesthetic influence. This seems to be an abnormal action. But this action varies so slightly from the normal that most persons can use alcoholic beverages, in moderation, with profit. But in some cases their use develops an appetite which leads to intemperance with all its disastrous consequences.

How does the body dispose of alcoholic beverages? When taken in moderation the alcohol passes into the blood, is carried to the tissues and burned, yielding energy with some anesthetic effect. If more alcohol is taken than can be utilized in the development of energy it must be eliminated. Alcohol reaches the tissues in modified forms, having undergone various changes of which we know but little. A substance with such strong chemical attractions as characterize alcohol could not mingle with the digestive fluids and the blood, could not come in contact with the different tissues without causing and suffering extensive and varied changes. Some of these changes result in the development of energy, others fit portions of the alcohol for elimination by the lungs, others fit it for elimination by the skin, kidneys or intestines and possibly to some extent by the liver.

The fact of change is shown in the difference between the pleasant odor of alcohol or of alcoholic beverages generally, and the odor—the villainous odor—of the breath of a man who drinks alcoholic liquors to excess. We do not know what changes occur nor where they take place, but very soon after alcoholic liquors are taken into the body the alcohol wholly disappears so that no trace of it can be found, although its effects may last for days, or even weeks.

Alcohol used so as to serve as a food exerts also some anesthetic influence, but this abnormal action is very slight. As the quantity of alcohol is increased there is no corresponding increase of energy, but the restraining or depressing influence is proportionately augmented. This restraining action is apparently exerted mainly upon the nervous system, and specially upon that part which has for its duty the regulation and coordination of the activities of the body.

This anesthetic or toxic influence shows itself first in sluggish thought action, through failure in comparison and discrimination, then through sluggish muscular action, and then clumsy manipulation, arising from lack of coordinating power, finally ending in total incapacity for any effective mental or physical activity.

The permanent results of an intemperate use of alcoholic liquors are general and varied. They come on so gradually that in most cases they are fully established before their presence is even suspected. These effects are so general and indefinite that frequently pathological conditions are ascribed to alcohol that are due to other agents, and vice versa. In general there is diminished power everywhere in the body.

Dr. T. D. Crothers, superintendent of Walnut Lodge Hospital, Hartford, Conn., says: "It is not possible at present to specify any particular diseases which are caused by the action of alcohol alone. Alcohol seems capable of producing the most complex degenerations in every organ and tissue of the body physiologically, deranging the functions of the organs and then their structure, diminishing their normal activity and capacity. Alcohol, like other poisons, varies in its effects on different persons, producing in certain organs more prominent effects than in others; in certain cases concealed for a long time, then bursting out, revealing a degree of degeneration unsuspected; concentrating on the liver, stomach, kidneys or heart, or suddenly developing into serious lesions of the higher brain centers."

These physical changes are accompanied by depression and feebleness, by loss of memory and diminished power of attention and volition, by a blunting and deepening obscurity of the moral and ethical sense, by diminished capacity for sleep, by diminished power of recuperation. Eventually the relations of the ego to the external world become disturbed, followed by melancholy, suspicion, delusions, hallucinations and changed emotional states, merging into various chronic insanities.

In general there is loss of energy and power to resist the invasion of disease, and there is loss of power to overcome disease, so that while alcohol cannot be said to cause any particular disease, it predisposes the body to almost every disease. The abnormal action is slight and at first the change is functional, but at length functional changes give place to structural changes, local and occasional inflammations become permanent and chronic, muscle is replaced by fatty substances; the brain is contracted, the cells and fibres are shrunken and wasted, and often the mass is threaded by an abnormal growth of connective tissue; the stomach is inflamed, its muscular fibers may suffer fatty degeneration, or its walls may be thickened by abnormal growth of connectctive tissue; the cells of the stomach and liver may be atrophied, the liver and kidneys may be loaded with useless fat or penetrated by bands of connective tissue, the walls of the heart and blood-vessels suffer fatty degeneration and the blood corpuscles become changed in form and structure.

These and many other changes occur. They come on quietly and gradually; we cannot explain them, we do not understand them, but they tend toward physical degeneration, mental decay and death. These changes are peculiar. There seems to be little or no disintegration of tissue, so that at almost any point short of actual dissolution there is hope of recovery, providing the cause is removed by cutting off all supply of intoxicating liquor.

Alcoholic beverages, then, furnish nourishment and afford such grateful and pleasing, such soothing and quieting effects as to make them indeed beverages fit for the gods. But used intemperately they produce such disastrous results as to make them the very scourge of humanity.

The methods of dealing with the evils of intemperance involve such radical differences of opinion among would-be reformers that very little progress has been made. But the question has become so momentous that all lovers of humanity everywhere are laying aside minor differences and taking up the consideration of the drink question in earnest. Nations are working with nations. Society, science, and the church are joining hands in the work. And this awakened interest and activity already gives promise of important results.

MATHEMATICS.

EDITED BY

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HISTORY OF ARITHMETIC.

XIII—DECIMALS.

There are obviously two ways in which decimals may have originated. They may have come as a special form of common fractions, or they may have been the result of an extension of the decimal idea below units. These methods of origin are directly opposite. Which is the true origin will probably never be known. Some of the early writers take one view and some the other. The notion that was in the mind of the man who first gave the idea to the world can not now be determined.

The earliest indication of a decimal is found in the writings of Orontius Fineus, in a work published in 1525. In order to get the square root of 10 he extracts the square root of 10,000,000, getting 3,162. He then separates the 162 and uses it to get sexagesimal fractions. He does, however, make the statement that in the 162, 1 is a tenth, 6 is six hundredths, etc. This would indicate that he had the decimal idea. For the next fifty or sixty years various writers used Orontius's method but avoided the decimal idea.

In 1585 Simon Stevin de Bruges, better known as Stevinus, wrote a work which he called *La Disme*. In this book the real idea of a decimal is first made prominent. He made a very strong argument for the use of his *nombres de disme*. His notation was very awkward, but his thinking on the subject was very clear. By most writers Stevinus is considered the father of decimals. De Morgan, Dr. Peacock, and the Britannica all give him this distinction.

Stevinus's work was introduced into England in 1608 through a translation made by Richard Norton. Richard Witt in 1613 made free use of the decimal notation in his tables of compound interest, although he expressly states that the numbers are to be considered the numerators of common fractions whose denominators are 100. Napier in 1617 wrote a treatise on the subject, and by some is thought to have been the inventor of the decimal point. In 1619 Henry Lyte, Gentleman, published a work on the subject. In presenting the merits of decimals he became so enthusiastic as to say, "If God spare my life, I will spend some time in most cities of this land for my countrie's good, to teach this art." William Oughtred in his *Claris* of 1631 so presented decimals as to greatly help in making them popular.

The exact origin of the decimal point is no better known than the origin of decimals themselves. Some very ingenious hypothetical origins have been suggested, but they lack one essential element—verification. Many of the early forms were ingenious but cumbersome. The rise of decimals to popularity would have been more rapid had a simple form of the separatrix been invented at the start. The usual law of progress was followed and the separatrix evolved from the complex to the simple.

Some of the more important forms will now be given with the date and name of the inventor. For this we will use the number 3.1416.

(0) (1) (2) (3) (4).
3 1 4 1 6, Stevinus, 1585.

(1) (2) (3) (4) (5).
3 1 4 1 6, Norton, 1608.

3 | 1 4 1 6, Richard Witt, 1613.

$3^{0}\ 1^{I}\ 4^{II}\ 1^{III}\ 6^{IV}$
$3\ 14^{II}\ 16^{IV.}$
$3\ 14\ \ 16^{IV.}$
} J. H. Beyern, 1619.

3 | 1416, Oughtred, 1631.

3 $1416^{IIII.}$ Herigone, 1634.

3 | 1. 2. 3. 4.
1 4 1 6, Johnson, 1633.

Other forms, later than the above, and the inventors of which I do not know are:

(1) (2) (3) (4)
3. 1. 4. 1. 6.
3. 1. 4. 1. 6.
3. 1 4 1 $6^{(4)}$
3. 1 4 1 6
3. ' 1 4 1 6
3, 1 4 1 6

Gunter, the inventor of Gunter's Chain, is thought to have had more to do than any one else, with the introduction of the present point. It came into use gradually and finally in England superseded all other forms, just as the comma did on the continent. The exact time and place of its first appearance will probably never be known.

THE NEW INDIANA ARITHMETICS—I.

There will go into the schools of Indiana this fall a new series of arithmetics from which much is expected. The authors, Professor Cook of Illinois and Miss Cropsey of Indianapolis, are both practical and successful school people. Both have made a special study of the subject. Much of the material in each book of the series is the result of schoolroom experience. The elementary book is largely the work of Miss Cropsey, while the advanced book is due to Professor Cook.

The mistake may be made of expecting too much from the new books. There are some things which text-books can not do. No text-book in an elementary subject can take the place of the teacher. The better the book the greater aid it will be to him. The real spirit of the subject, however, must become vital to the student through the medium of the teacher. No book, however good, supplies all the needs of all pupils. It must necessarily have in view that hypothetical individual known as the average pupil. The teacher, in the use of any book, must have the courage both to supplement and to cut out. For some classes the list of problems in a particular subject may be inadequate, while other classes in the same school need only half the list. The wise teacher will always fit the conditions to his class regardless of his text-book.

A good text-book by its logical arrangement, careful development and statement of principles, and its large number of well-graded and interesting exercises, apparently diminishes the work of the teacher. This reduction is only apparent, for to realize all that the good text-book makes possible, the teacher must look deep into the subject and see it in many of its bearings which do not seem necessary in the use of a poor book.

To many teachers the elementary book will be disappointing because it does not contain any work for the first and second years. This omission should not be interpreted to mean that no number work should be done in these two years. It only means that during this period the work should be oral, and wholly controlled by the teacher. Much of it must necessarily be objective. It is the time *par excellence* for learning to count. The number system, which lies at the basis of all mathematics, is known through the medium of counting. Children take a keen interest in counting. Its importance, united with the child interest it arouses, makes it a thing of fundamental consideration in early school life. This counting should be by one's, two's, three's, etc., both forward and backward. Of course no attempt should be made to hurry matters, but everything should be done carefully. The advance should be slow and every point should be clinched by frequent reviews. The counting should certainly extend to one hundred.

Although many consider it rank heresy, the use of figures in the first and second grades is a great help to the children in their counting. Figures are as necessary in number work as letters are in reading.

In the first two years it seems reasonable to expect that the children should form a good acquaintance with the number system, and through it should know all the simpler number combinations of the addition, subtraction, multiplication and division tables and that they should be able to express ordinary numbers by means of figures.

HOW TO TELL ONE'S AGE.

(1)	(2)	(4)	(8)	(16)	(32)
1	2	4	8	16	32
3	3	5	9	17	33
5	6	6	10	18	34
7	7	7	11	19	35
9	10	12	12	20	36
11	11	13	13	21	37
13	14	14	14	22	38
15	15	15	15	23	39
17	18	20	24	24	40
19	19	21	25	25	41
21	22	22	26	26	42
23	23	23	27	27	43
25	26	28	28	28	44
27	27	29	29	29	45
29	30	30	30	30	46
31	31	31	31	31	47
33	34	36	40	48	48
35	35	37	41	49	49
37	38	38	42	50	50
39	39	39	43	51	51
41	42	44	44	52	52
43	43	45	45	53	53
45	46	46	46	54	54
47	47	47	47	55	55
49	50	52	56	56	56
51	51	53	57	57	57
53	54	54	58	58	58
55	55	55	59	59	59
57	58	60	60	60	60
59	59	61	61	61	61
61	62	62	62	62	62
63	63	63	63	63	63

The above columns are numbered 1, 2, 4, 8, 16 and 32. If it is known in which columns the age

is found, then the age is the sum of the numbers of these columns. For example, some one says his age is found in the columns numbered 1, 4 and 32, then his age is 1+4+32=37. The table will give any age or number up to and including 63. It could be easily extended to larger numbers. Will our readers try to discover the principle underlying the table?

NOTES.

Mr. C. J. Waits, formerly superintendent of the Carlisle schools, will teach mathematics in the Terre Haute High School during the leave of absence of W. P. Morgan. Mr. Morgan expects to take a university course in mathematics, thus better fitting himself for his chosen work.

Dr. David A. Rothrock of Indiana University, has just published a pamphlet on "Invariants of the Finite Continuous Groups of the Plane." In this he follows the general line of the Lie theory; but makes many important original additions. The work is the result of some of the study that the author did under the direction of the late Professor Lie at Leipzig.

Superintendent J. M. Greenwood of Kansas City, and Dr. Artemas Martin of Washington, D. C., have recently issued a bibliography of American arithmetics. Dr. Martin possesses what is probably the most complete collection of American arithmetics. The bibliography is very complete, giving author, publisher, and a brief description of each book.

Some months ago in these columns there appeared a review of Fisher & Schwatt's algebra. The same authors have recently published *A School Algebra*. The book retains the main features of the first book, but is reduced in size, thus making it a more convenient book for high schools. The larger book has received very high praise from mathematicians and educators. We see no reason why the *School Algebra* should not meet with even greater success. The book is published by the authors at Philadelphia.

William A. Hamilton of Zanesville, leaves Indiana and goes to San Francisco to take charge of the mathematics in the California School of Mechanical Arts. Mr. Hamilton is a graduate of the mathematical department of Indiana University, and has done a year's graduate work. He is well fitted for his new position.

The American Book Company has just issued Milne's *Plane and Solid Geometry*. The author has united, in a very admirable way, the inventional and demonstrable geometry. Each proposition is preceded by a number of questions designed to lead the student to a correct understanding of the truth to be demonstrated. While this is a splendid thing in the early study of the subject, it is doubtful if it is needed in the higher books. The arrangement of the book is such that this matter in whole or in part could be omitted at any stage of the pupil's progress. The number and character of the exercises is a strong feature of the work. At the end of each book there is a *Summary*, giving the truths established in a simple but systematic way.

There will appear in these columns a number of articles upon the use of the New Arithmetics. It is the intention to serve, in the best way we can, the interests of the common-school teachers. We invite you to send to the editor of the department whatever questions you may have upon the new books. In the articles to follow we will discuss as fully as space will allow the questions which seem to be the most important.

From the press of Harper Bros. there comes a very interesting little book under the title of *Observational Geometry*. In the character and arrangement of the material the author has done a fine piece of work. It is not only suggestive but also instructive. No boy or girl can open the book without desiring to know its contents. The practical construction of models, and the frequent use of level, square, straightedge and compass closely relates the book to the world of nature and art surrounding the student. The illustrations are characteristically good. The use of such a book in the seventh and eighth grades would almost revolutionize the study of geometry.

R. L. Myers & Co. of Harrisburg, Penn., are the publishers of Weidenhamer's *Mental Arithmetic*. The book is made up entirely of problems. It proceeds in a logical way from very simple easy problems to those that are quite difficult. The problems are of such a character as to constantly call forth the best thought of a student. The book is a valuable contribution to the neglected subject of mental arithmetic.

A reasonable amount of fleas is good for a dog—they keep him f'm broodin' on bein' a dog.—*David Harum.*

MUSIC.

EDITED BY

J. G. CRABBE, Ashland, Ky.

ANNOUNCEMENT.

In announcing a department of music for the INLAND EDUCATOR it is not intended to offer a series of lessons in music, nor to outline a course of study, nor yet to advocate any particular method of teaching music. The advocates of the various plans have ably and amply set forth their respective merits, and many friends of each will be found among readers of the EDUCATOR. The purpose is rather to supplement what is already being done by presenting each month one or two songs, and a small quantity of reading matter prepared or selected with special reference to a finer appreciation of music and of its value in the public schools. It is most encouraging to feel that modern psychology recognizes the importance of the emotive power in character building, and the boundless influence that good music has to awaken this power. The poet told us long ago that "music has charms to soothe the savage breast," but it is vastly more to know and to recognize the wonderful power it has over the impressionable minds of children. The words and melody of a beautiful song fixed in the memory of a child shall do more in the shaping of his life than a score of sermons. It is possible to attune a young life to a harmonious rhythm that will influence and dominate all his years. It is this thought, then, that will guide in the selection of material for this department. We have a rich store to select from and shall demand from every candidate for admission that it possess beauty, tone, meaning and life.

A WORD ON METHOD.

It goes without saying that there must be some definite method of procedure in the music teaching of the schools. While the singing of good songs has a value that is being recognized more and more by the thoughtful educators of the country, the mere singing of songs accomplishes little or nothing by way of imparting a knowledge of the elements of music to the child and, unless music teaching in the schools accomplishes more than mere song singing, it can hardly hold a place in the schools as an educational factor. If children are to acquire a knowledge of music, there must be some system of gradation, some method of classification, so that the material presented may be adapted to the capacity of the child and his efforts in music-study may be properly directed. And it is the principle upon which this gradation is based that is the all important one in music teaching.

Many efforts have been made during the past few years to grade music so as to put it on a practical working basis and properly relate it to the regular branches of school work. The saying "to teach music as we teach arithmetic and reading," has grown to be a very trite one. But now educators everywhere are asking themselves why these so-called educational plans of teaching music, with their rigid gradations and orderly progression of sight-reading exercises, get so little response from the child. The answer is that music cannot be treated at first as a study in the elementary facts of the science; it must be treated as a manner of expression for the child, and such phases of the art must be presented to the child at first as he will naturally respond to. The most beautiful and inspiring of all studies of the school curriculum, it loses its charm and sinks to a practical utilitarian level when robbed of its inspiration and set before the child as a study in bare technique. Most especially is this true when these studies are embodied in long successions of sight-reading exercises, the child's progress being regulated by his ability to read them.

HELPING CHILDREN TO BECOME MUSICAL.*

A beautiful song and its correct interpretation embody all the elements of music teaching, even in the most advanced stages of study. I would make the statement now that I believe that all musical difficulties may be reached and solved through the needs of interpretation, and that without a loss of interest to the child or a necessity of much musical drudgery. We are learn-

(Continued on page 32.)

* From a paper read before the National Educational Association.

"The Sparrows' Bath," chosen from *The Modern Music Series*, first book, is commended as really classic, though perfectly simple. For the September issue one or more selections will be taken from *The Riverside Song Book*. All the music to be used during the year has been selected with the greatest care, and teachers may expect a group of songs that will be richly worth using.

The Sparrows' Bath.

Translated from F. Rohrer. Rheinberger.

Allegretto.

p

1. The spar-row at the brook-side Dips in his lit - tle beak, And
2. Then, wait-ing not an in - stant, His feathers stand-ing out, He
3. And now the spar-row cous - ins, The un - cles and the aunts, The

Allegretto.

pp leggieremente e staccato
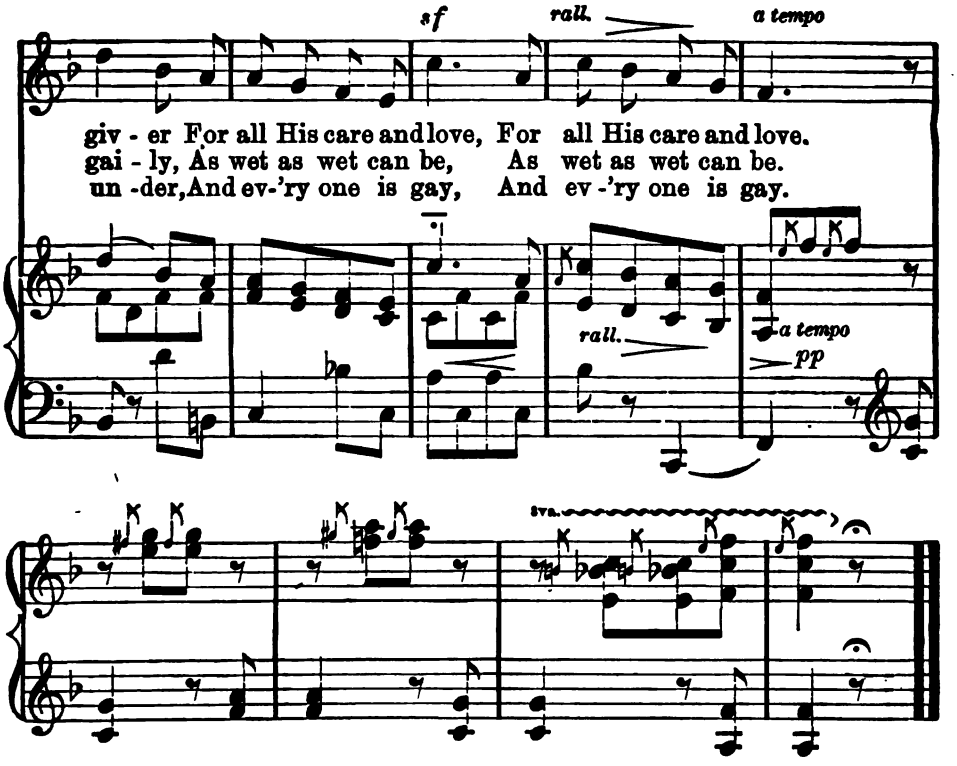
sf

drinks, and looks ex - act - ly As if he'd like to speak. He
springs in - to the wa - ter And flaps his wings a - bout. The
fa - thers and the moth - ers, With man - y flirts and flaunts Come
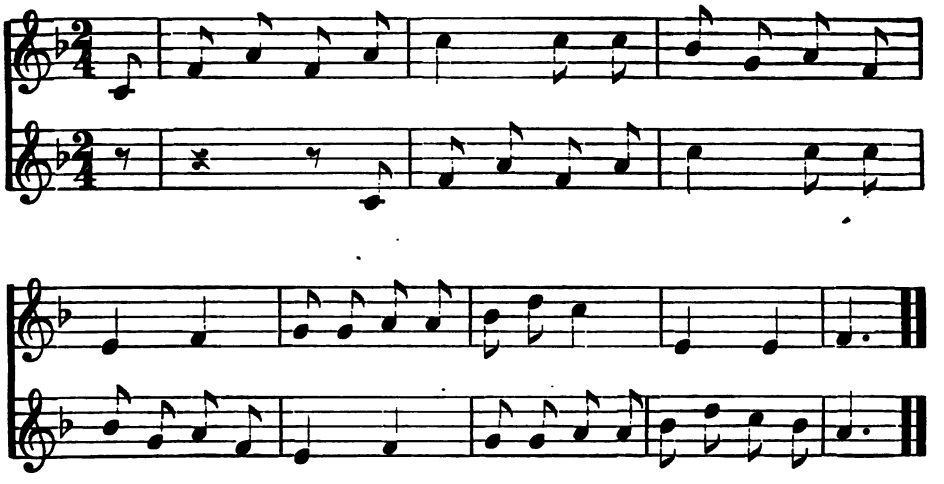
drinks the clear, cold water, Then lifts his head above As if he'd thank the
brooklet doesn't hurt him, But cools him graciously, And out hops sparrow
flock-ing to the brookside, And in their cut - est way They, too, dip quick-ly

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The Sparrows' Bath.



A Study.



Copyright 1898 by Scott, Foresman & Co.

The above study, as will be seen, is derived from the song; it is a simple, two-part study written in the form of a little canon. The upper part should be read first, either read at sight or sung by imitation until the melody is memorized. As the lower part is simply a repetition of the upper part, it will be only necessary then to adjust the singing of the same melody in combination, dividing the pupils into two parts properly balanced.

(Continued from page 29.)

ing that the divorcement of the study of music from expression sets the mind adrift like a traveler trying to accomplish the impossible feat of traveling upon two roads at the same time. As a consequence the vital energy is spent in vibrating between the two interests instead of reaching the final goal of interpretation through the solution of the musical difficulty.

In helping children to become musical, the work is poorly begun if the teacher who stands before her class insists upon breaking every law of the musical decalog by her very presence. With a voice unmusical and unsympathetic, unrhythmic in body and in mind, she is apt to destroy the first great, and, I will say, the most important, music lesson which can be brought to the child, that of artistic example and presentation. I have in mind a teacher who receives several thousand dollars a year for making her children wholly unrhythmical and unmusical. Bad habits and bad taste emphasized in these early years become fixed and almost ineradicable faults. I would then place at the head of our work artistic presentation. In this should be comprehended all the details of good singing on the part of the teacher—good breathing, well-placed and modulated voice, rhythmic and musical singing.

The next consideration, of equal importance, is the song itself; we have always had good ones, and we are continually increasing their number. By a good song I do not mean the merely pretty and fanciful creation, with which we are being deluged with the increasing interest in music for children. Even with very little children the song chosen should be worth teaching and singing.

In the choice of material, first of all we must have a story—a something to tell. Fortunately for us, the song with a moral is a thing of the past. A good poem from the child's standpoint, as well as a literary one, is necessary to our work—one of description or conversation; an episode or dramatic plot, will serve our purpose. In a song the text is of the first importance, and the music should complement and lend itself to the development of its moods.

After establishing its general characteristics and giving it a reason for being, we can next take up its musical treatment. Is it a melody song, a rhythm or harmony song? Is tone or movement the leading feature, or does its harmony fascinate the ear with many voices, or complementary story-telling? The limitations of the class quickly decide the point of emphasis. If the voices are bad, we need sweet tones and pure melody; if the children are passive, we need the activity and life of a rhythmical song. If their ears are defective, we can cultivate their listening capacities to good effect. The story keeps the interest alive, and the treatment of the musical element offers opportunities for a good music lesson. In interpreting a song it is well to remember that its idea is cause, and the picture obtained is effect. Sometimes our pictures tell tales out of school.

You cannot expect a child to express what he does not feel or understand. Develop your song and gain your results as far as possible through the interpretation of its idea.

MARI G. HOFER.

THE POWER OF MUSIC.

Music is to me an ethereal rain, an ever soft distillation, fragrant and liquid and wholesome to the soul, as dew to flowers; an incomprehensible delight, a joy, a voice of mystery, that seems to stand on the boundary between the sphere of the senses and the soul, and plead with pure, unrefined human nature to ascend into regions of seraphic, uncontained life.

O wondrous power! Art thou not the nearest breath of God's own beauty, born to us amid the infinite whispering gallery of his creation! Type of all love and reconciliation, solvent of contrary, hard elements—blender of soul with soul, and all with Infinite harmony.—*John S. Dwight.*

To live content with small means; to seek elegance, rather than luxury; refinement, rather than fashion; to be worthy, not respectable; and wealthy, not rich; to think quietly, act gently, talk frankly; to listen to stars and birds, babes and sages, with open heart; to do all bravely; await occasions, hurry never, in a word, to let the spiritual unbidden and unconscious grow up through the common,—this is to be my symphony.—*Channing.*

PRIMARY.

EDITED BY

FLORA J. COOKE, Chicago.

COURSES OF STUDY FOR THE PRIMARY GRADES.

INTRODUCTORY.

In outlining the work for the readers of THE INLAND EDUCATOR for the coming year I shall follow, in general, the topics discussed in the Chicago Summer School outline for 1899. The syllabus below will serve as a general guide, and may aid teachers in formulating their plans. In the October number the school work of the Sandwich Islands will be described and illustrated by pictures, portraying the life and habits of the children of the Islands. The regular discussion of the topics enumerated below will commence in November and continue throughout the school year.

During that time any changes will be made which shall promise greater practical value to the teacher. To the end that this work may be directly helpful and suggestive to the readers, and meet, as far as possible, their special needs and problems, I purpose to give the most careful consideration to all communications that teachers may send me. Their suggestions and questions should strongly influence such an outline of work, if they should not to any great extent determine its character and direction.

SYLLABUS.

TALK I. VALUES COMPARED.

(*a*) The ideal of the teacher.
(*b*) The governing motive of the children.
(*c*) The self-activity exercised by the children.
(*d*) The kind and quality of expression necessitated.
(*e*) The habits established by the work.
(*f*) The intrinsic value of the subject-matter.
(*g*) The results in knowledge.
(*h*) The results in skill.
(*i*) The amount of drill required, etc.

TALKS II AND III. HISTORY.

Life and interest of the children the determining guide in the work. Work of the year discussed under the following topics:

1. (*a*) Discussion of the play house (16 ft. x 18 ft. x 8 ft.) which the seventh and eighth grades planned and constructed upon its school grounds during the past year. (*b*) Division of labor and the character of the work which each grade in the school contributed. (*c*) Probable effect upon the little children, as they entertain in it, preparing refreshments and looking after the comfort and entertainment of their guests. (*d*) Problem of the heating, lighting and ventilation of the house.

2. Description of a continued constructive play. Its value tested by its reaction upon the children. (see models made by children). (*a*) Planning of the house. (*b*) Studying of designs for wall paper, oil-cloth and carpets. (*c*) Modeling, decorating and baking of a set of clay dishes. (*d*) Study of wood necessary for furnishing the rooms. (*e*) Inventions in cooking of food. Stories of efforts of primitive peoples in the same directions. (*f*) Trip to Art Gallery and selection of pictures for the house, etc.

8. (*a*) Meaning of the home to children. Its comforts, etc. (*b*) Construction of simple models by children of a house which would protect them in each season. (*c*) Comparison of their work with that of other peoples—Indians, Eskimos and Pilgrims, etc. (*d*) Influence of environment upon the life and work of a people.

4. Stories of industry and invention. Necessity precedes invention, and these stories are given when the children have made sufficient observations to enable them to understand the invention.

5. Stories which embody ideals of courage, generosity, patience, strength, wisdom, unselfishness, kindness to animals, are selected, for the reason that the children imitate what they admire, and for the unconscious influence which they may exert upon character.

TALKS IV, V, AND VI. NATURE STUDY.

Discussion of outlines in nature study, illustrated by the experiments and expression of the children in the primary grades.

1. (*a*) Subject-matter selected under the motive of bringing the children constantly into direct contact with nature's phenomena, and providing for them the influence of its interdependence, beauty and change. (*b*) Seeking through their daily actions in school to have their children grow unconsciously to appreciate their responsibility to themselves and to the community to which they belong.

2. Subject-matter. (*a*) Relating to the necessities of life—food, air, water, hygienic living,

etc. (*b*) Relating to the industrial arts of the community. (*c*) Relating to the æsthetic development of the children. (*d*) Expression. Relation of reading and writing to such study. (*e*) Necessity of number (illustrated by work with the children).

3. Field Trips—considered as the foundation of work in the schoolroom. (*a*) Use of experiments. (*b*) Study of types of landscapes in the vicinity, swamp, lakeshore, sand-dunes, etc. (*c*) Purpose of such study.

TALK VII. LITERATURE.

(*a*) The selection, adaptation and telling of stories. (*b*) The place of myths and fairy stories in a course of study. (*c*) Discussion of a suggested list of stories told in connection with nature study, history, geography, etc. (*d*) Basis of the selection of such stories. (*e*) Effect of good literature upon speech and written expression. (*f*) Its intellectual reaction in observation, etc.

TALKS VIII AND IX. NUMBER.

(*a*) Its place in the life of a child. (*b*) Discussion of number required for clear imaging in nature study, geography and history. (*c*) The teaching of processes and arithmetical facts to little children. (*d*) The place of drill in the work.

TALKS X AND XI. SEAT WORK.

(*a*) Its essentials—kinds of work which arouse the best independent efforts of the children. (*b*) The standpoint of criticism. (*c*) The choice of material. (*d*) Discussion of a detailed outline of seat work for the year. (*e*) Its probable results in habits, taste, knowledge and skill.

TALKS XII AND XIII. READING.

(*a*) Its purpose. (*b*) Methods of teaching reading compared. (*c*) Discussion of selected type reading lessons in literature, history, science and Sloyd (these are read and compared). (*d*) Relative value of oral and silent reading in the schoolroom. Special function of each. (*e*) Steps in the preparation of a good reading lesson. Its essentials. (*f*) Use and place of phonics in teaching reading.

TALK XIV. WRITING AS A MODE OF EXPRESSION.

(*a*) Relation between a child's oral and written vocabulary. (*b*) Economy in the teaching of language, spelling, grammar, punctuation and capitalization. (*c*) Methods of teaching writing compared. (*d*) Discussion of the purpose and basis for this form of expression. (*e*) The necessity of drill in the work.

TALK XV. EXPRESSION.

(*a*) Value of the different modes of expression. (*b*) Influence upon children of songs, games, gymnastics, manual training, dramatic stories and artistic surroundings.

TWO INTERESTING GAMES.*

FRENCH BLIND MAN'S BUFF.

A pupil, furnished with a wand and blindfolded, is standing in the centre of a group of players, a circle. The playmates dance and hop around him until he signals them to stop by tapping the floor with his wand. He points his wand at the players and asks a question, to be answered by the pupil pointed out in a disguised voice. Should the blindfolded player recognize the voice, he is relieved by the owner thereof.

THE "POUND."

A pound (a small square or ring), sufficiently large to hold the full number of players, is formed by placing dumb-bells or clubs together. A very small opening is left for the keeper. Each of the players represents a different animal, determined upon before beginning the game. The different players move about around the pound, uttering sounds in imitation of the animals they represent. The pound keeper, greatly annoyed by the din of noise, rushes forth and in his mad endeavor to secure some of the animals, creates a general stampede. He finally succeeds, however, in capturing some species and confines them in the pound. If, during the absence of the keeper the pound is in danger of being wrecked by the more ferocious animals, the keeper returns from his chase to better guard it or to repair damages. He is notified of these dangers by his faithful dog "Spitz," who can be heard above all the din.

A GAME OF TAG.

A grasshopper once had a game of tag
With some crickets that lived near by,
When he stubbed his toe and over he went,
In the twinkling of an eye.

Then the crickets leaned up against a fence
And laughed till their sides were sore,
But the grasshopper said, "You are laughing at me,
And I shan't play any more."

So off he went, tho' he wanted to stay,
For he was not hurt by his fall,
And the gay little crickets went on with the game
And never missed him at all.

A bright-eyed squirrel called out as he passed,
Swinging from a tree by his toes,
"What a foolish fellow that grasshopper is—
Why he's bit off his own little nose."

*From Chicago Normal School Leaflets.

THE TOWNSHIP INSTITUTE.

FIRST MEETING.

INTRODUCTION.

It is generally understood that in no other state is the township organization of schools so thorough and so satisfactory as in Indiana. The township institute, bringing all the teachers of a township together once a month for the study of certain work that has been carefully outlined by competent educators and that is uniform throughout the state is held to be one of the strongest features of the Indiana school system.

The state law provides that the county superintendent "shall hold one preliminary institute in each township in his county, before the opening of the schools for that year, for the purpose of helping the teachers in the organization of their schools and giving any other needed assistance; but instead of holding such preliminary institute in each township, he may hold a joint institute for two or more adjoining school corporations."

The trustee, with the advice and concurrence of the county superintendent, appoints, for the year, an experienced and competent teacher to serve as township principal, whose duty it shall be to take entire charge of the institute work in the absence of the county superintendent, serve as chairman of the program committee, and carry out the instructions of the superintendent and trustee.

The work is based, as usual, chiefly upon the two reading circle books, *How to Teach Reading in the Public Schools*, by S. H. Clark, published by Scott, Foresman & Co., 75 cents, and *Organic Education* by Miss Harriett Scott, published by D. C. Heath & Co., 90 cents. There is provision made, however, for some study of adolescence, and also of arithmetic, geography and the other common branches. For direction in geography, readers are referred to the series of articles on that subject by Dr. C. R. Dryer, beginning in the August EDUCATOR.

It should be understood that the "Outlines" of the various topics are prepared under the direction of the state department of public instruction, and that the "Comments" are written by the persons whose names are signed to them.

HOW TO TEACH READING IN THE PUBLIC SCHOOLS.

OUTLINE.

In order that we may derive the greatest good from our study of Mr. Clark's book, we should approach it sympathetically. There is great room for improvement in our methods of teaching reading, and much help should come from Mr. Clark's book. We shall, therefore, begin with a study of the Introduction, which presents the author's point of view and assists us better to grasp the underlying principles of his method.

I. THE INTRODUCTION (Page 7).
 a. Cite objections to the method that directs the child's attention to inflection, pause, etc.
 b. What are the requirements of a successful teacher of reading?
 c. Show how "complexity" and "intangibility" of vocal expression increase the difficulty of teaching reading.

II. THE CRITERION OF TIME (Page 19).
 a. Show by expansive paraphrase that the extract beginning "Wrapped in a maze of thought," p. 22, should be read in slow time.
 b. Discuss the author's suggestions regarding the movement of the selection, p. 26, from *Julius Cæsar*.

III. GROUPING (Page 28).
 In connection with this subject study Chapter VI, p. 128.
 a. What is the relation of the grammatical to the rhetorical pause?
 b. What determines the pause? The length of the pause?
 c. How would you correct reading that was too fast?

IV. PRACTICAL EXERCISES.
 Volunteers should be called for to read such examples as are found on pp. 30, 32, 35, 36, etc. The lessons in the text are designed for practice, and we cannot hope for the best results in our classes unless we not only master the theory, but also become proficient in reading.

V. Between this and the second Institute we should endeavor to put into practice what we have thus far learned, and report the results of our work in class at next Institute. This plan should be adopted throughout the entire course.

COMMENT—THE TEACHING OF READING—I.

The present series of brief articles is written with the very definite and restricted purpose (1) of assisting the teacher to enter with greater interest into the study of reading as outlined for the various institutes of the year, and (2) to aid her to put into practice in her classes from the outset, the principles laid down in our manual *How to Teach Reading in the Public Schools*.

The teacher, then, is advised to read the book through before the opening of school, or as soon thereafter as possible. It is not necessary to master all the details at the first reading; the purpose of which should be to gain a general idea of the method, rather than a mastery of particulars. After this preliminary study the teacher will feel greater confidence in her ability to apply the method of the book—a method which in some respects differs very materially from methods of the past.

Regarding the institute work, the most im-

portant feature of the first meeting is the subject of the *expansive paraphrase*. It may, therefore, be helpful to enlarge somewhat on this subject. The purpose of paraphrasing expansively is to make the thought and feeling clearer and more real by dwelling upon the words of the author. A very common habit in school and out of it, is to read without thinking. To overcome this habit, and consequently to improve the oral expression, the pupil should take each thought and hold it before the mind until the picture stands out clearly. It is remarkable how many details will grow clearer and clearer, and further, how the feeling will be increased, as the ideas get possession of us.

In our text-book, page 20, will be found an example of the *expansive paraphrase* designed to show how an appreciation of the thought will affect the rate of utterance. Let us take another illustration, to show how the paraphrase will assist us to get the feeling. In the revised Third Reader is the selection *Abou Ben Adhem and the Angel*, the last four lines of which are as follows:

> The angel wrote and vanished. The next night
> It came again with a great wakening light,
> And showed the names whom love of God had blest,
> And lo! Ben Adhem's name led all the rest.

The average child will be likely to read the conclusion as if it contained simple statement of fact. But we know it should contain far more than this. It should manifest a certain joy and elevation of feeling, *growing out of our sympathy with Abou*. How shall we make this clear to the child? Shall we tell him to be joyful? Shall we tell him to raise his voice? Under favorable circumstances such suggestions may be helpful, but they are certainly not educative. Let us, so to speak, open out the thought of the lines for him, and let us endeavor to reach his feeling in this way, striving thus to develop that true principle which must lie at the basis of all emotional expression.

Let us first get the child to grasp clearly Abou's disappointment upon discovering that his name was not, on the occasion of the angel's first visit, written in the book of gold. Let him understand that even *he*, the pupil, appreciates the nobility of good deeds, and in this way arouse a certain sympathy for Ben Adhem. This by way of preparation. Then comes the second visit. How intently the good man regards the angel, and how earnestly he scans the angel's list! Has his life been a failure? Has he misunderstood God's message to men? But, see! at the head of the list is Ben Adhem's name. Oh! the joy of it to Ben Adhem; and the joy to *us*, who sympathize with him. It is this joy that gets into the voice as we read the last two lines, and this joy might be expressed in the paraphrase "And lo!—and how I rejoice to tell it!—Ben Adhem's name,—the name of this loveable man whose life had been devoted to well doing, *his* name, think of it! Should his life not be an encouragement to us?—his name led all the rest."

Such practice as that suggested above should be a part of our teaching from the beginning and should be continued until the pupils form correct habits of interpretation.

S. H. CLARK.

ORGANIC EDUCATION.

OUTLINE.

I. Significance of the title—"Organic Education."
 a. For "Education" see page 16.
 (1) Explain and illustrate education as viewed from the side of the universe and from the side of individual interests.
 (2) The advantage of such a view.
 (3) Notice the motto for Part I, page 2, and for Part II, page 57.
 b. For "Organic" see pages 22, 24, 26, 27, 28, 32, 33, 51, 53, etc.

II. Examination of the preface.
 a. The relation of theory and practice therein indicated?
 b. The advantage of understanding this relation?

III. The study of Chapter I. (First read the chapter as a whole, endeavoring to seize its dominant thought.)
 a. The typical periods—the reasons for selecting them. (See pages 3, 10, 11.)
 b. The doctrine of the "culture epoch".
 (1) Examine carefully each of the nine quotations. (Pages 4-8.)
 (2) In what sense is the theory a "poetic fancy"?
 (3) Why is this not conclusive against its truth? (See pages 8 and 9.)
 (4) The solution of the problem. (See page 9.)
 (a) Work out with especial care the reasons for child-study as given on pages 10 and 11.

COMMENT.

It is no doubt the desire of the teachers of the state to have the time arrive when the books for the Reading Circle can be selected and the teachers enter upon their study without the assistance of an outline or explanation of the outline. The custom is, at present, to have the books selected and then carefully outlined. It is the further custom to have the outlines explained and elaborated. Progress in the preparation of the teacher is finally to bring about the power to grapple with any book, however difficult, and master its meaning. Knowing that this is the end to be sought the growth toward it should begin. It will be, of course, very gradual owing to the fact that each year adds to the teaching force those who have not before engaged in the work. With the thought in mind that the teachers are to become accustomed to the work so as

to study the books without any explanation of the outline, and finally to enter upon the study without any outline, it is the intention in these articles to present no systematic interpretation and expansion of the topics of the outline but rather to give what may be termed notes upon the outline. These notes will touch upon different points in the outline and indicate to a degree the mode of dealing with the points not considered.

I.

In beginning the study of any book it is usually valuable to notice its title. This generally expresses in compact form the salient notion of the work. In this case in the use of the title "Organic Education" a very important thought is expressed. That thought may be obtained by noticing the sense in which the word "Education" is used and then the significance of the term "Organic." It is evident from the examination of the word "Education" as used on page sixteen that education is not regarded as merely the work of the school. Any form of activity is regarded as educative. What the child does in his play, in his family life, in the school, or in any one of the institutions of society, is both life and education at the same time. It is education because it modifies his thought and his habits, giving him a new view of affairs. For that reason it is said "Education is the widest and deepest living possible at any given moment." This is viewing education from the standpoint of the institutions, but the author also speaks of education as "the progressive organization of individual interests." This is seen to be merely the other side of "living in the widest and deepest sense." At one time the child is interested in procuring a fruit for his own use. All of his impulses or activities are coordinated and regulated in order to accomplish this end. That is a certain mode of living and it is a certain education. At the same time it is an organization of his interests. Afterwards he becomes more developed and sets up as his purpose the procuring of fruit to be shared by him and his playmates. This is a higher form of life and, therefore, a wider and deeper form of living; it is, according to the author, a wider and deeper form of education. All of the child's impulses, interests and activities are regulated and coordinated so as to bring about this second, this higher end. He has progressed, therefore. His life, his education, is the progressive organization of individual interests. It might thus be shown from step to step that as the child's interests become more universal his life becomes wider and deeper, and his education makes the same progress. Education both as a result and as an activity is living, and all living is the progressive organization of individual interests.

This same thought is indicated in the motto of Part I as found on page two. Dr. John Dewey's expression is there given and forms the motto—"Education is not a preparation for life; it *is* life." This indicates that any act performed by a human being is his education. In the first place it is the result of his former efforts and all such results may be termed education. In the second place this act modifies him and is educational in that sense. It is very important for the teacher to understand the truth that education, and especially the education that the school gives, is not something distinct from life and the mere preparation for true living, which is to come afterwards. It must be seen that the school is one of the institutions of society and that a large part of the child's life is to be passed naturally in that institution. The endeavor, therefore, should be made to have the life of the school as wide and as deep as possible. It should also be an interesting life—a life that the child would not willingly give up, and one to which he in later years will often wish to return.

This same thought is set forth in the motto of Part II—"That they might have life, and that they might have it more abundantly." If the child desires the fruit for himself and procures and uses it for himself, he has a certain degree of life. If, however, he desires it to be used for himself and for his playmates, and procures and uses it in this higher way he has life more abundantly. Any one who, examining a painting can find a certain degree of meaning in it has life. If, through thought and study, he becomes able to find a greater meaning he has life more abundantly.

II.

The word "Organic," as used in the title of this book, has the ordinary sense of organic. Any action is organic if it indicates reciprocal activity of the elements or parts of a unit. Organic activity manifested the origination of action. Activity induced from the outside is not organic. The pressure of an object towards the center of the earth is action, but the action is not organic. A stone moved by external forces does not show organic activity. The reciprocal action that occurs in the plant, as shown by the influence of the bark upon the roots or of the roots upon the bark, is organic. All other elements in the plant contribute to the development of the bark as an end. In like manner all the other elements of

the plant including the bark, contribute to the growth of the root as an end. Each part is end and all of the other parts are means. This notion of organic action can be carried over into the spiritual world. Thoughtful work in the executive department of government increases the presence of thought in the judicial and legislative departments. Increase in intelligence in an individual results in a refinement of the emotions and in rationality of will. In considering the significance of the term "Organic" the student of this book should scrutinize carefully the use of the term as it occurs from page to page. By such an examination the idea would gradually become very familiar. For example, on page twenty-two, the author says that the expression "greater thoroughness under the organic system" means the learning of something that is not extraneous. It is the learning of something not imposed upon the child from without, it is the natural development of his own interests, it is his own, it is really himself. The author goes on to say "He cannot forget or lay it aside when school-hours are over for the day, or when school-days are over for life; for it is in a real literal sense his own self." Such learning is organic and not mechanical because the development of any one capacity is brought about through the cooperative activity of the others, and it produces greater efficiency in those others. On page twenty-four the expression "Organic System" is used. By examining carefully its connection the meaning of the term "Organic" is rendered more clear. The author has been speaking of the work of the child which involves, to a degree, art, ethics and sociology. The child is said to be absorbing these elements gradually from the first grade up with a vital thoroughness. Since the subjects are so approached and studied they become, step by step, the child's own. Therefore every capacity is modified by such work and the result is in no sense external, it is organic.

III.

The purpose of the work, as seen in the preface, is helpful in a study of the book. "It is to make a plain, straightforward report of a plan of work that has been in operation experimentally for some years in one of the regular ward school buildings of a large city." The author calls attention to the fact that in presenting the report the underlying principles or philosophy of the plan are given first. The underlying principles of philosophy, however, constitute the theory of the plan. Therefore it is said that theory thus seems to come before practice. It is denied, however, that such is the case. It is claimed on the contrary that the origin of the plan is purely practical and that the theory arose from the study of the work that had already been done. It is further said, however, that the meaning of the word became explicit after the work had been carried on for some time. Herein is hinted the relation of theory to practice. When it is said that practice should come before theory the case is only partially stated. Practice in one sense always comes before theory, and theory in another sense always comes before practice; indeed each is necessary before the other. Even in the present case it is no doubt true that the theory arose first, but the theory at that time was dim, indistinct, indefinite. It was, however, a projection of the practical work although an indefinite one. This practical work following step by step, the meaning of such work became clear. This is the same as saying, however, that the theory became distinct. No sooner had the theory become distinct than the practical work rose in completeness in response to this theory. The practical work was more definite, more systematic now than it could have been while the theory was indistinct. The principle seems to be as follows: (a) The theory or meaning exists indistinctly. (b) Growing out of such theory the practical work begins a gradual development. (c) Arising from this development of the practical activity the theory, i. e., meaning of it, becomes distinct and comprehensive. From this time, therefore, the practical work is based upon a distinct and well-wrought out theory which precedes it. The indistinct theory precedes practical work at first. Out of this practical work a clear theory presents itself. Based upon this clear theory more valuable practical work occurs. This is the order of progress.

IV.

In the study of Chapter I, as shown in the outline, the teachers are advised to read the chapter as a whole, first, endeavoring to seize, as they read, its main thought.

In this connection it may be well to dwell somewhat upon the mode of considering a chapter or paragraph, because the teacher in his individual preparation or in his work in an educational institute deals largely with the printed page.

Each chapter, each paragraph, and even each sentence or phrase is a unit through the central idea that is revealed in the various distinctions possessed by the object which the chapter,

paragraph, and even sentence or phrase express.

There are, therefore, three main modes of procedure in the study of a chapter, paragraph, etc. (a) A reading of the chapter or paragraph from the beginning to the end, reflecting, as the reading occurs, upon the meaning. (b) Addressing to one's self questions that will render obvious to the mind the two or more coordinate distinctions and the subordinate distinctions under the main distinctions; and still more subordinate distinctions belonging to those just found. (c) The construction of questions that will concentrate the mind upon the central idea exhibited in all these distinctions.

Certain mental effects will arise from such work. The first mode of procedure mentioned will result in a dim apprehension of the main truth and the various distinctions and their inter-relation. The second will give rise to a clear knowledge of the distinctions. The third will produce a definite notion of the unity of the various distinctions through their function of exhibiting the central idea or attribute. This movement is in accordance with the natural progress of the mind in its study, and recognizes the fact that the chapter or paragraph is a product of thought.

V.

In a study of the book certain passages should be very thoughtfully considered, while others receive only attentive reading. Among the passages in chapter I of this book to be worked out carefully are the nine quotations shown on pages four to eight. For example note the one from Wilhelm Meister which says "To act upon the world outside of us, and to cooperate with our fellow-men, is the end and aim of all education. Each shares in the accumulated results of the activity of the world. Each lives his own life, but at the same time lives the life of the race, sharing the experience of all vicariously." This passage hints the doctrine that the development of the child is analogous to that of the race; it also indicates that the child has two selves—the larger self found in society and the smaller self found in the individual himself. The aim of education is shown to be participation. Since each is to share in the accumulated results of society he must contribute to society. The doctrine of grace is implied in this quotation from Goethe. For the small contribution that the individual makes, society gives over to him its joint product. Each quotation, if thoughtfully considered, will thus yield important educational doctrines.

HOWARD SANDISON.

THE HISTORICAL MEETING OF THE INDIANA TEACHERS.

The Historical Section of the Indiana State Teachers' Association held its second annual meeting in the state house at Indianapolis on June 22nd. The meeting was much more largely attended than the first meeting held a year ago. All the persons who appeared on the program for papers were present and the discussions were interesting and profitable. The main object of the meeting this year was to find out the actual condition of history and history teaching throughout the state of Indiana. Preparatory to this, questions had been sent out, largely to the teachers throughout the state, inquiring into the present condition of history work throughout the eight grades, the high school and the university. The first paper dealt with the history in the first six grades and was presented by Ellwood W. Kemp of the State Normal School. He had sent out a list of questions inquiring principally as to what was being done both as to matter and method in these lower grades. The answers received were fairly representative of the work throughout the entire state, and showed that about two-thirds of the teachers throughout the state are following a course of work, similar to that sent out by the State Superintendent of Public Instruction, which contemplates the study of the history of the Aryan race from its rise through its general steps of development down to the time of the discovery of America. This paper was discussed by I. F. Myer, superintendent of Carroll county, F. L. Crowe, superintendent of Jay county, and E. N. Canine, superintendent of the Greenwood schools. All of these, who were practically working the plan proposed, strongly supported it and at the same time pointed out that for a more perfect development of it there is great need for additional matter to be supplied both for teachers and pupils in their daily work. It was also pointed out by the speakers that in these grades, as in also the seventh and eighth grades, at the present time there is great need of more historical atlases and good historical charts by means of which the relation between geography and history can be more fully developed.

The second paper of the session was presented by Professor Heironimus of the Richmond public schools. He had sent out a list of questions similar to those already mentioned, from which he had received about fifty answers. These answers revealed a great lack of uniformity in the work which is now being done throughout the state in the seventh and eighth grades. This

paper was discussed by George Asbury, superintendent of the Flora schools, who gave his hearty approval of the present course in history now being developed throughout the state. He pointed out the two extreme mistakes of teachers in teaching history in these grades holding that some stick too closely to the facts without showing the relation between the facts, while others deal too much with generalization without having sufficient facts to verify them. He also emphasized the fact that at the present time too little attention is given to the use of the study of geography in history. After Mr. Heironimus's paper was presented there followed a general discussion of the history work throughout the entire grades. Dr. Stephenson of De Pauw University, gave a hearty approval to the general thought of the relations of the different parts or blocks of history as proposed by the outline in the course throughout the state, but very strongly contended that it was impracticable to teach it to children. He thought that children would be unable to understand the life of the Greeks and Romans, or the work of mediæval Europe in the crusades or in the monastery, and not only expressed doubt as to whether this could be understood in the grades, but even questioned the propriety of history work in the grades at all. This opinion was likewise held by Superintendent Esarey of Perry county. He not only opposed the plan as impracticable but held it to be wrong in theory. Professor Howard Sandison, of the State Normal School, spoke upon the subject, strongly supporting the idea that the correct way to study history is to study it in the order in which history itself has unfolded, and that the life of the race when it was in its childhood is more easily understood than the more complex history of recent times. Hence the plan of work, as now being taken up throughout the state, is not only correct in theory but entirely practicable from the standpoint of the child.

The third paper was presented upon the subject of "History in the High School," by Miss Adelaide Baylor of the Wabash high school. Miss Baylor had gathered data of the present condition of history in the high schools throughout the state, which revealed the fact that there is a great lack of uniformity in the history work being done in the high schools, some having but one year, others two, a less number three; and four schools, from which she had reports, had four years work. The leader, in the discussion of this paper was State Superintendent Jones. He suggested that more attention be given to history in the non-commissioned high schools and less attention to science on account of lack of laboratories and equipment. He advised the extensive use of atlases instead of wall maps on account of the maps being expensive. He also advocated a three-years course of history in the high schools distributed thus: in the first year no history; in the second year, first half—study of the Oriental history, second half—study of Greece and Rome; third year, first two-thirds—study of French history, last one-third—a brief study of English history to the Tudor period; fourth year, first half—thorough study of English history with emphasis upon the period beginning with the government of Walpole, second half—nineteenth century history and American political history. He laid great emphasis upon the study of facts in history leaving the pupil with the facts in mind to "work out his own salvation." This paper was discussed by Superintendent Reddick, Professor Sandison, Professor Hodgin, Superintendent Tomlin, Superintendent Gillhams and Professor Kemp, the general thought being presented that the study of history in the high school should move over the same field as that worked out in the grades, with the exception that in the high school the student should plow deeper and see more broadly the relation existing between the facts than it was possible to do throughout the grades. A four-years course of history for the high school was suggested in which the first year would deal with the Oriental nations, and Greece and Rome, the second year with mediæval history, the third year with English history, and the fourth year with American history.

The last paper of the meeting was presented by Professor Hodgin of Earlham college, who presented a very carefully tabulated report of the data, which he had gathered from the universities throughout the state, concerning history work and political economy which is there being pursued. The report of Professor Hodgin, like those in all the preceding, revealed a considerable diversity both as to matter and method in the work being done, and while Professor Hodgin did not attempt any generalization of the facts which he presented, the general tenor of the paper showed that, both as to matter and method, the work in the universities is getting more and more in touch with the best thought of modern views of history.

Taking the session as a whole it was the most interesting and active one which the history section has ever held. It revealed that throughout the state of Indiana in the country schools, in the township high schools, in the city high schools, and in the universities there is an active

and healthy growing tone in history work, and that very great advancement has been brought about in this field in the last few years. It showed likewise great room for improvement. Perhaps, upon the whole, it showed that as yet there is a great need of systematic organization of the history work from the lower grades to the university. It showed great need of furnishing material in the way of atlases, maps, and well selected books for the use of the pupils and teachers especially in the lower grades and in the high school. It revealed the fact, strongly emphasized by those who are practically working throughout the lower grades of the schools, that the teachers as a class are not as well prepared as could be desired for presenting the work. On the other hand the reports were very encouraging in showing that throughout every quarter of the state there is coming to be a growing enthusiasm for better preparation for history instruction, and that better methods are rapidly being applied in teaching.

BITS OF INFORMATION IN GRAMMAR.

LOGIC AND GRAMMAR.

It has been said that Aristotle, the father of logic, discovered its forms through the study of grammar. C. C. Everett, in his *Science of Thought* says, in the chapter on language, that the most severe criticism that could be made on grammarians is that they have divorced grammar from logic. Grammar has become a study of form, a mere jugglery with words. We have learned in grammar to recite definitions and rules by rote, to spin off parsing by the yard, or to "fix up" sentences in all kinds of cute little rings, braces or curlicues but we have lost the essence of the study. The spirit is gone and only the hull or husk remains. It is dry and tough and the child does not like it. We have made out of grammar a grind instead of making it the key to all that is spiritual as Dr. Harris would have us do. The child comes to us asking for bread and we give him a stone when we teach him grammar.

So runs Dr. Everett's criticism on grammarians and teachers of grammar and we have to admit that there is too much truth in it. It isn't as universally true now as it was at the time Everett wrote it for "Some there be that strive to lay their hand upon the golden key that opes to the palace of eternity" or grammar based on logic, but they are few while the formalists are legion.

The teacher need not present all the subject of logic as a foundation of grammar. The student of grammar need not be a logician. One need not master the syllogism or its rules, the different kinds of propositions, etc., in order to study grammar. In grammar we do not study inductive reasoning, deductive reasoning, analogy, fallacies, etc. We study grammar inductively; we use inductive reasoning; but we do not make a study of any such subjects.

Two points in logic, however, must be mastered by the student of grammar if he is to be saved from the cold grave of formalism. The child who is ready for technical grammar must understand: (1) The nature of the thought which the sentence expresses. (2) The nature and kinds of ideas. It is true that this is not very much of logic; but this knowledge is essential. The child need not master these topics in an exhaustive or technical way. He does not study them as he would study them in logic for he has a different end in view. He is studying grammar when he studies the thought and the idea.

While an exhaustive or technical knowledge of these points is not necessary, it is absolutely necessary to any reasonable study of the sentence that the child have this fundamental information. He must see the nature of a thought. It is an act of the mind made up of three elements. It is this triple movement of the mind that the child must see in every thought: (1) An idea or activity about which the mind asserts something —the thought subject. (2) An idea or activity which the mind asserts of the thought subject or first idea—the thought predicate. (3) A relation between these two—the thought relation. Every thought is made up of this triple movement and the child can never understand the parts of the sentence, he can never reasonably explain a single sentence until he has this fundamental information concerning the thought. He hasn't gone into logic very deeply, to be sure, when he gets hold of this basis. Any child in the seventh or eight year of his course will be able to grasp this view of the thought easily and will not know much about logic when he gets it, but for reasonable, lifegiving work in grammar, it is essential.

The other day in my grammar classes in the State Normal School, first term students beginning the subject of grammar, mature men and women, who have taught school and hold county licenses, said in analyzing the sentence, "Silently, one by one, in the infinite meadows of heaven, blossomed the lovely stars," "The subject of the sentence is 'Silently one by one in the infinite meadows of heaven.'" In analyzing "This pleasure I have seldom enjoyed," they said, "The subject of the sentence is 'This pleasure.'"

These young men aud women are not peculiar. They are not exceptions. The same thing occurs every term, term after term, with all beginning classes. The difficulty lies not with the students but in the formal grammar work which they have been doing. These are the results of formal, mechanical grammar—grammar without a foundation of logic. How could a student of formal grammar be expected to look in the last part of the sentence for the subject! He naturally looks for the subject in the first part of the sentence, so he takes the first words for the subject, the next for the copula, and the last for predicate. How can the boy or girl be expected to give the subject of a sentence without first seeing the thought subject which the subject of the sentence expresses? If one is to understand the sentence, which is an instrument, he must understand the thought, which the sentence expresses. It is impossible to comprehend an instrument without understanding something of the work which it is to do.

J. B. WISELY.

DEATH OF WILLIAM B. SINCLAIR.

After several years' struggle with disease which became acute six months ago, W. B. Sinclair died at his home in Knox, Ind., July 6. He was well known throughout the state as a school man of ability, and was twice the candidate of his party for the state superintendency. He was born in Putnam county, but most of the forty-two years of his life was spent in Starke county. Here he received the elements of his education. He then spent three years in the Cook County Normal, two years as a student and one as an instructor. In 1881 he entered Purdue University, and after graduation was elected superintendent of the Starke county schools, where he served for twelve years. In this capacity and also in his work as a teacher he met with marked success. He was a man of principle, exemplary in character, honest and conscientious. Not only his home county but the whole state may well grieve this loss of a good man.

THE NEW TEXT-BOOKS IN INDIANA.

Readers of the EDUCATOR will remember an extended comment on the new Readers, appearing in the July issue. In this, the August number, Dr. Aley has something to say in the mathematical department about the new Arithmetics. The following letter from Superintendent Jones addressed to the county superintendents and trustees under date of July 19 contains still other information that will be of wide interest:

"1. The State Board of School Book Commissioners has entered into contract with the following named firms to supply books for the common schools of Indiana for a period of five years, and at the retail and exchange prices indicated below:

Ginn & Co., Frye's Complete Geography, retail price 75 cents, exchange price 55 cents;

Ginn & Co., Frye's Introductory Geography, retail price 30 cents, exchange price 23 cents;

Indiana School Book Co., Ind. Ed. Srs. First Reader, retail price 10 cents, exchange price, none;

Indiana School Book Co., Ind. Ed. Srs. Second Reader, retail price 15 cents, exchange price, none;

Indiana School Book Co., Ind. Ed. Srs., Revised Third Reader, retail price 25 cents, exchange price, none;

Indiana School Book Co., Ind. Ed. Srs., Revised Fourth Reader, retail price 30 cents, exchange price, none;

Indiana School Book Co., Ind. Ed. Srs., Revised Fifth Reader, retail price 40 cents, exchange price, none;

Silver, Burdett & Co., The New Advanced Arithmetic, retail price 45 cents, exchange price 35 cents;

Silver, Burdett & Co., The New Elementary Arithmetic, retail price 35 cents, exchange price 25 cents;

Eaton & Co., The New Era System of Slant Writing (1–6), retail price 5 cents, exchange price, none;

Eaton & Co., The New Era System of Vertical Writing (1–6), retail price 5 cents, exchange price, none.

2. The exchange may be made any time prior to March 1, 1900. If it is desired to make an exchange, the person making it must give for the "new book" a copy of the "old book" and the exchange price, as given above.

3. No book now out of adoption can be sold to a pupil by any dealer or trustee in lieu of the newly adopted books. No requisition should be made for any book now out of adoption.

4. All publishers of both old and new books have filed their consent to have the dealers handle the common school books with the restrictions and conditions provided for in an Act Approved and in force March 1, 1893, the same being Sections 6298 and following of R. S. 1897, the same being Sections 55 and following of the School Book Law of Indiana as sent out by this department.

5. In regard to the manner of introducing these newly adopted books all officers charged

with their introduction should read all of Sections 6293 and 6307 R. S. 1897, the same being Sections 50 and 64 of the School Book Law of Indiana as sent out by this department.

6. All sales of books to dealers by the trustees must be for cash, the dealer being allowed a discount of 10% from the retail price of the books. In settling with the County Superintendent, for books sold to dealers, trustees must pay out of the Special School Fund one-half the amount of the 10% discount, which amount the County Superintendent must remit to the publishers (see Section 56 School Book Law).

7. Either the Vertical or Slant Systems of writing may be used in the schools; but uniformity should be maintained in any given corporation."

INDIANA YOUNG PEOPLE'S READING CIRCLE.

Through the courtesy of Mr. Geo. F. Bass, manager of the circle, THE EDUCATOR has received the following set of excellent books, adopted by the board for 1899-1900. The prices are also named at which he will furnish the books:

	By Mail.	Express or Freight.
FOR SECOND YEAR PUPILS.		
Around the World—Carrolls	$0 40	$0 33
The Hiawatha Primer	40	33
September to June—Warren	36	30
FOR THIRD YEAR PUPILS.		
Braided Straws—Foulke	40	33
Eugene Field Book—Burt & Cable	56	50
Signal Boys of '75—Otis	57	50
FOR FOURTH AND FIFTH YEAR PUPILS.		
The Pilot of the Mayflower—Butterworth	1 02	90
Washington's Young Aids—Tomlinson	1 02	90
Odd Little Lass—Wright	91	80
King's Geographical Reader, III	56	47
FOR SIXTH AND SEVENTH YEAR PUPILS.		
A Girl of '76—Blanchard	1 02	90
The City of Seven Hills—Hardings	58	50
The Boys of Fairport—Brooks	89	80
Australia and the Islands of the Sea—Kellogg	67	56
FOR EIGHTH AND ADVANCED YEARS.		
Bird Neighbors—Blanchan	1 87	1 20
This Country of Ours—Benj. Harrison	1 00	90
Being a Boy—Chas. Dudley Warner	55	48
Total		$10 70

INDIANA STATE BOARD QUESTIONS FOR JULY, WITH DISCUSSIONS.

HISTORY.

1. What were the conditions of geographical knowledge in Europe in the fifteenth century as to (a) The form of the earth, (b) The size, (c) The extent of Asia?
2. Why was Roger Williams persecuted by the Puritans of Massachusetts? Why the Quakers? Were the Puritans inconsistent in these persecutions or not? Give reasons for your answers.
3. Which one of the thirteen colonies was last founded, by whom founded, and what motives were predominant in its founding?
4. What financial difficulties confronted congress and the colonies in the Revolution? What means of meeting these difficulties were adopted?
5. State briefly Alexander Hamilton's plan for strengthening the public credit.
6. Why were the southern states more eager for the annexation of Texas than the northern states.
7. What states entered into the southern Confederacy?

1. (a) That it was flat.
 (b) That it was, say three or four thousand miles long and two or three thousand miles wide.
 (c) That it occupied from a third to a fourth of the territory which we now know it to occupy.

2. Because he said that the Puritans should have bought the land from the Indians; and, in religion, said they should give all persons the right to be their own judge in all matters of religion. The Quakers were punished for essentially the same reason. Yes, the Puritans were inconsistent because, in protesting against the English church, as they had done, they essentially set up the doctrine that all persons should be given the right of religious freedom.

3. (a) Georgia.
 (b) By James Oglethorpe.
 (c) As a refuge for poor English debtors.

4. (a) The continental congress had almost no independent means, and the states were very slow to assist the continental congress.
 (b) The continental congress borrowed money, issued paper money, and continually begged the states to pay the taxes which were levied upon them by the continental congress.

5. (a) That the United States government should pay the domestic debt.
 (b) That it should pay the foreign debt.
 (c) That it should pay the state debt incurred since the beginning of the Revolutionary war.
 (d) That a United States bank should be established.
 (e) That a national internal revenue system should be established.

6. Because it would give additional territory in which to extend negro slavery.

7. Texas, Arkansas, Louisiana, Mississippi, Tennessee, Alabama, Florida, Georgia, South Carolina, North Carolina, Virginia.

GRAMMAR.

"Dryden, though a great and undisputed genius, had the same cast as L'Estrange. Even his plays discover him to be a party-man, and the same principle infects his style in subjects of the lightest nature; but the English tongue, as it stands at present, is greatly his debtor."—*Goldsmith.*

The first seven questions following refer to the above selection:

1. State which of the clauses are principal, which subordinate, and give the subjects and predicates of each.
2. Give the modifiers of (*a*) *had*; (*b*) *cast*; (*c*) *discover*.
3. (*a*) Select one infinitive, and give its syntax
(*b*) Select one relative pronoun and give its construction.
4. Give the mode and tense of each of the following verbs:
(*a*) *had*; (*b*) *discover*; (*c*) *to be*.
Give the case and construction of *party man*.
5. Select (*a*) one adjective phrase; (*b*) two adverbial phrases.
What does *as it stands at present* modify?
6. Parse (*a*) *genius*; (*b*) *him*; (*c*) *but*; (*d*) *greatly*.
7. (*a*) Give the syntax of L'Estrange.
(*b*) Dispose of the word *as*, last member, second sentence.
(*c*) Select an adverb in the positive degree; an adjective in the superlative degree.
8, 9 and 10. Write in outline a course of study in technical grammar for pupils below the high school, giving your own ideas as to the time it should be commenced, and the kind and amount of work that should be done in each grade.

1. Principal clauses: (Dryden) [*had* the same cast]. (Even his plays) [*discover* him to be a party-man]. (The same principle) [*infects* his style in subjects of the lightest nature]. (The English tongue) *is greatly* [his debtor]. Subordinate clauses: Though [a great and undisputed genius] (subject and copula understood); as (L'Estrange) [*had*]; as (*it*) [*stands* at present].

()=subject [] = predicate. Copula or word in which it is implied, in italics.

2. (a) *Had*, "Though a great and undisputed genius." "The same cast as L'Estrange." (b) *cast*, "the;" same as L'Estrange. (c) *discover*, "him to be a party-man" (clausal phrase).

3. (a) "to be," copula-like element of the clausal phrase. (b) "as," direct objective modifier of the verb, "had," (understood), and expresses the relation between the two thoughts.

4. (a) "Had," indicative mode, past tense. (b) "discover," indicative, present. (c) "to be," present infinitive.

5. (a) "of the lightest nature." (b) "in subjects of the lightest nature;" "at present." It modifies the verb "is."

6. (a) Noun, common, class, 3d person, sing. number, common gender, nom. case—pred. (b) Pro., personal, third per., sing. number, mas. gen., obj. case—subject-like element of the clausal phrase. (c) Coordinate conj., expresses the relation between thoughts. (d) Adv. modifies the verb "is," expresses adv. idea of degree.

7. (a) Noun, sub. of verb, "had," (understood). (b) conj. adv., modifies the verb, "is," in the prin. clause and the verb, "stands," in the subordinate clause, and expresses the relation between the thoughts. (c) "greatly," "lightest."

8, 9 and 10. It should not be taught lower than the seventh grade. Up to that time pupils should work on the art side of English. In the seventh and eighth grades pupils may cover the subject of technical grammar as presented in the best elementary texts, dwelling only briefly on the more technical points. For a good outline see the state course of study in use in this state for the past two years.

LITERATURE.

1. How do the writings of Hawthorne compare with those of Lowell? Mention two of the greatest productions from each author. Why do you think the productions are especially good?
2. What is the difference between American and English literature? Why does the latter contain so much more standard literature than the former?
3. Give a brief outline of "The Great Stone Face." What is the theme of this production?
4. Name three writers of the Colonial period.
5. Name three writers of the Revolutionary period.
6. Tell something of Wordsworth's writings. Name one of his greatest works.
7. Who wrote "The Merchant of Venice?"
8. Name your favorite poem. Give author and theme.

1. Hawthorne's work is made up mainly of fiction, of an allegorical or symbolic nature, while Lowell's is composed of poetry and essays, the latter mainly critical. Hawthorne's writings are characterised by a kind of overhanging gloom or semi-fatalism, while Lowell's are noted for exuberance of spirit and imagery. Hawthorne's work is generally regarded as the "high-water mark" of American literature. Two of his greatest productions are *The Scarlet Letter* and *The Marble Faun*, fascinating in style and tracing with great insight some of the relations existing between sin and character development. Two of Lowell's works are *The Vision of Sir Launfal*, with its famous descriptions, of the June day and winter, and *My Garden Acquaintance* with its quiet ease and appreciation of nature in all her phases.

2. As the terms are generally used the first means literature produced in America, and the second, literature produced in Great Britain. In reality "English literature" covers both. No distinction other than place of production will hold. From Cædmon to Tennyson the length of time is 1200 years; from the earliest settlement in America to the present time is not 300 years, and we are only ninety years away from Irving's *Knickerbocker's New York*, while the English are 500 years away from Chaucer.

3. *The Great Stone Face* is the story of the successive supposed fulfillments of a legend which said that a great man would in time come to a certain valley, whose features would bear a resemblance to the face made by a peculiar formation of rock at one side of the valley. This legend made a deep impression upon a boy named Earnest, who scanned each new claimant with hopefulness only to find that each lacked a certain nobility of expression, benevolence, which belonged to the Great Stone Face. In succession the people hailed Gathergold, Old Blood and Thunder and Stony-Phiz as the one prophesied of aforetime and then as readily forgot each. In the meantime Earnest, through

constant contemplation of the benevolent countenance, had grown into the spiritual likeness of the face. A poet visiting the valley sees the resemblance and points it out. But Earnest, with true humility, still hopes for a greater than himself to fulfill the prophecy. The idea of the selection is that we grow to be like what we center our thought upon. If our ideals are high our life is high.

4. Cotton Mather, Jonathan Edwards, John Winthrop.

5. Benjamin Franklin, Thomas Jefferson, Philip Freneau.

6. Wordsworth's writings are noted as standing at the crest of the great movement in English Literature known as the Romantic Revival or the Return to Nature. He deals with common things and treats them in a simple way. Probably the best known of his greater works is the famous *Ode on Immortality*.

7. Shakespeare.

8. Answers will differ. The "answerer" would say Tennyson's *The Idylls of the King*, and the theme, the warfare of Soul and Sense.

GEOGRAPHY.

1. Sketch map showing drainage of North America.
2. Describe in general terms the mountain system of South America.
3. Compare Texas and Vermont as regards climate, topography, population, products, etc.
4. Draw a township map showing system of subdivisions, according to U. S. land survey.
5. Describe the geographical features of Alaska.
6. Describe the principal routes from the United States to the Philippine Islands. Which is the shorter?
7. Where, in the world, are coal, iron, petroleum and gold chiefly produced?
8. How would you teach to young pupils the form and motions of the earth?

2. South America is bordered along the western coast by the high and narrow system of the Andes mountains, among the loftiest in the world. In the north the plateau of Guiana is traversed by several ranges in general east-west direction. The plateau of Brazil in the east central part supports numerous ranges, of which the most prominent skirt the southeast coast.

3. Texas west of the Pecos river is mountainous. The west central part is a high, smooth plateau, from which the surface slopes southeastward to the coastal plain. The temperature in summer is hot except in the highest portions. The winter temperature is mild but subject to great and sudden depressions. The rainfall decreases from fifty inches on the coast to less than twenty inches on the plateau. Its principal products are cotton, cattle and sheep. The population is less than nine to the square mile.

4. Vermont is a part of the New England plateau, and is traversed north and south by the Green mountains. The winters are cold and the summers cool, the rainfall about forty inches. It produces oats, hay, sheep, cattle, dairy products and building stone. The population is about thirty-five to the square mile.

5. The most prominent feature of Alaska is the high mountain range along the southern coast, which extends southwestward forming the long peninsula of Alaska and the chain of the Aleutian Islands. North of these lie the valleys of the Kuskokwim and Yukon rivers. North of the Yukon are low ranges of mountains extending northeast and southwest. North of these wide lowlands stretch to the shores of the Arctic ocean. The coast of southern Alaska is bordered by a chain of islands separated from the mainland by sounds. Deep, narrow fiords extend far into the mountains, from which numerous glaciers descend to the sea. The rainfall is abundant and the shores are heavily wooded. Mts. McKinley, Logan and St. Elias are the highest peaks in North America.

6. From San Francisco across the Pacific ocean. From Atlantic ports around South America and across the Pacific. From Atlantic ports across the Atlantic, through the Mediterranean sea, Suez canal and Red sea, and across the Indian ocean. The first is the shortest.

7. Coal—Eastern United States, Great Britain, Germany, France, Belgium. Iron—Eastern United States, Great Britain, Germany, France, Belgium, Sweden. Petroleum—Eastern United States, southeastern Russia, Burmah. Gold—South Africa, western United States, Australia, Siberia, Alaska.

8. By using the simplest possible apparatus, a plain ball of wood or rubber, an orange or an apple. First spin it upon the table like a top and thus establish an axis, poles and an equator, which can be marked. Revolution should be shown by carrying the ball in proper position around an orbit marked upon the floor, using some object to represent the position of the sun. The rotation of the earth should be actually seen by watching the circumpolar and other stars.

READING.

1. State advantages and disadvantages of concert reading?
2. What would be the advantages, and what the disadvantages of substituting the daily paper for the book, in school reading?
3. Should the pupil stand or sit while reading in class? Why?
4. What advantages, if any, would be gained by the reader if punctuation marks were discarded?
5. Punctuate the following so that it would be a true statement: "Every lady in every land has twenty nails upon each hand five and twenty hands and feet all this is true without deceit."
6. Which kind of composition requires most maturity in the reader—description, essay or oration?

1. In the way of advantages concert reading may be so conducted that it will help regulate the rate of reading, hurrying up the slow and

holding back the rapid. It may give courage to the timid, and add something of variety to the exercises. Its chief disadvantage is in its tendency to reduce all to a dead level, thus destroying individuality. It should be used sparingly, if at all.

2. There would be no advantages. The only seeming one would be the fact that the newspaper matter would deal with things of immediate interest. This interest, however, is in most part merely temporary while the material of which most readers are made is of general significance. The transient nature of the daily paper precludes the same attention to matters of language as found in the classics.

3. Stand. It will give the pupil greater freedom, and require greater self-control on his part. His opportunity for controlling the attention and sympathies of the class is also increased.

4. The reader would be obliged to think out the meaning entirely without help. The gain would be more than balanced by the fact that much time would be lost, and that sometimes it would be impossible to get at the author's meaning apart from the author's punctuation.

5. Every lady in every land
Has twenty nails: upon each hand
Five; and twenty, hands and feet:—
All this is true without deceit.

6. Probably the essay, because it is in its purest form the most abstract of the three mentioned. But an unqualified answer is impossible. Emerson's *Over Soul* requires more maturity than Lowell's *On a Certain Condescension in Foreigners;* so does Webster's *Reply to Hayne*, while some of the descriptive passages in Milton's *Paradise Lost* are as difficult as any mentioned.

PHYSIOLOGY AND SCIENTIFIC TEMPERANCE.

1. What causes fainting? How would you restore a person who has fainted?
2. What is the germ theory of disease?
3. How is the temperature of the body regulated? Explain as to a class of pupils.
4. Describe the structure and give the function of the iris. What is the function of the sclerotic coat of the eye?
5. Describe the structure of the kidneys. What is their function?
6. Describe and give the functions of the lachrymal gland, the eustachian tube.
7. Of what is alcohol the product—fermentation or distillation? Name what you consider the best means of influencing young people against the use of intoxicants.
8. What is the relation between intemperance and immorality? How does alcohol affect the nerves and nervous system?
9. State the effects of alcohol on digestion. Why are the lungs so much affected by alcohol?

1. Anæmia of the brain; or, more remotely, loss of blood, profound emotion, or disease. Lay the patient on his back, loosen clothing, admit fresh air and apply stimulants.

2. The theory that disease is due to the growth of germs which attack and tend to destroy the body tissues.

3. (1) By such artificial agencies as fuel, clothing, drugs, etc.; (2) by natural agencies, as, circulation, contraction and relaxation of the capillaries, perspiration with its consequent evaporation, and activity of the organs in the digestion of food.

4. The iris is a thin, circular curtain, composed of fibre, muscle and pigment; it regulates the admission of light through the opening in its center. The sclerotic coat is protective, being strong and tough.

5. The kidney is compact, partly vascular, partly tubular; the outer cortex is granular, and into this, from an interior cavity, extend wedge-shaped groups of tubules called Malphigian pyramids and medullary rays. The function is to eliminate the urinal products.

6. To secrete the fluid which keeps the surface of the eye moistened. To furnish air to the middle ear, thus making the pressure on each side of the tympanum the same.

7. Of fermentation. (1) The actual results, social and moral, where intemperance prevails; (2) The physiological effects.

8. Intemperance tends to destroy moral sensibilities, and to degenerate the nervous system.

9. It depends almost wholly on the quantity used. In small and dilute quantities it probably aids digestion. In large quantities its effect on all animal tissues is bad.

SCIENCE OF EDUCATION.

BASED ON GENERAL PEDAGOGY.

1. A late writer, in commenting on the educational doctrines of Rabelais, says: "He discerned the glorious average of man, that even balancing of body, mind and soul, which, in maintaining spiritual equilibrium, makes us one with God." Comment on this as an educational ideal.
2. In education and in the development of human thought, for what did Francis Bacon stand? What influence has his educational thought had on the world?
3. One of the leading educational doctrines of Comenius is, that "the foundations of morality should be finally laid by the school by training to temperance in all things, cleanliness of habits, due reverence to superiors, prompt obedience, truthfulness, justice, charity, continual occupation, patience, serviceableness to others, civility." Should the school train the child in these virtues? Give your reasons.
4. State and comment on one of the leading educational doctrines of Rousseau.
5. What is the true aim of all school government?
6. Says Froebel, "Children have at first no real moral character." What is here meant, and do you agree with this?
7. What do we mean by practical education?
8. In your opinion, is the criticism well founded that the education given by the public school is not practical?

1. The human being at birth is finite with capacity to become infinite. The process of becoming infinite, or of becoming one with God, requires the best use of the means at hand—body, mind and soul in the individual—and the manifestation of spirit in the world. The union of these is the end of education.

2. For scientific observation and investigation.

Probably his thought has led educators to place larger stress on induction in teaching.

3. Yes. Because these are the qualities of perfect character.

4. Probably his leading doctrine was that institutional life hampers the soul's free growth. The modern idea is that the child must reach freedom through social life.

5. To show the individual his proper relation to social life; to make him self-directive.

6. Yes, this is true. The child at first acts impulsively; that is, without a knowledge of the end or result of his act. A moral act is a consciously purposive act in regard to which the question of right arises.

7. That which will best prepare the boy and girl to meet whatever conditions obtain in life.

8. Yes, as the word is generally used.

BASED ON PLATO'S REPUBLIC.

1. What was Plato's view of the close connection between the characters of men and of states?
2. What did Plato mean when he called "the good state" an aristocracy?
3. What did Plato mean by tyranny, as applied to government?
4. What can be said of the Greek Philosophy before Plato's time? Who were the Sophists?
5. What was Plato's attitude toward the life of his time?
6. "The life of man is said to have three principles." Name them.

1. Plato shows that there are three classes in the state; viz., rulers, soldiers, and working people, and that there are three corresponding divisions of the soul; viz., reason or wisdom, spirit with courage as the special virtue, and appetite which must be subject to temperance, spirit and wisdom. Plato thought that the three virtues of the soul cause the corresponding virtues of the state, or that governments vary as the characters of men vary.

2. By the "good state" Plato meant one governed by the best men in it (philosophers), and he called it aristocracy because the word literally means government by the best.

3. By tyranny as applied to government Plato meant, a state governed by one man who is absolute in power and authority, and uses it solely for his own caprice or selfish interests without regard to the interests of his subjects.

4. Of the Greek philosophy prior to Plato's time it may be said, that for two hundred years philosophers were seeking the fundamental principle of the universe in nature, but could not agree.

The Sophists were a class of Greek philosophers, some of whom were intelligent, serious, honest seekers of truth, and some seeking fortune by mere oratory and trickery, but all of whom rejected the philosophy based on a physical principle; they made the important change from a physical to a spiritual principle—from an objective to a subjective principle. That the authority of the individual ego was the final principle in the world.

5. Plato severely criticised the life of his time at every vital point. Its art, philosophy, its politics, and business were full of misrepresentation, injustice and vice, when held up in the light of what he conceived to be absolute truth and justice. He believed in truth, and that truth is one and eternal and rules all things.

6. The three principles in the life of man are:
 a. Reason or insight—wisdom.
 b. Spirit,—involving manly courage.
 c. Appetite—the sensuous nature.

ARITHMETIC.

1. Define quantity, number, figure. Explain the difference between number and figure. What is a common fraction? Upon what does the value of a fraction depend?
2. Outline the different kinds of work that a child 8 years old might be expected to perform in studying the number 12.
3. Express as a decimal $\frac{2}{5} \times \frac{\frac{3}{4}-\frac{1}{2}\times\frac{1}{4}}{3\frac{1}{2}-2\frac{3}{4}}$.
4. The floor, walls and ceiling of a room 18 ft. long, 16 ft. wide and 12½ feet high, are made of inlaid walnut, oak and rosewood. Find the cost of the work at $2.50 a square foot for labor, and $75 a thousand for lumber, surface measurement.
5. What sum must be invested at 6 per cent. for 10 months and 15 days, to produce an interest of $327.3247?
6. A wholesale dealer sold at a profit of 25 per cent. to a retail dealer, who compromised with his creditors at 40 cents on the dollar. What per cent. did the wholesale dealer lose?
7. The surface of a cube is 37.5 square feet. Find the volume of the cube.

1. Quantity is that which admits of mathematical processes. Number answers the question "how many." It expresses ratio between a given quantity and the measuring unit. Figure is a character used to express number. An expression by two numbers for one or more equal parts of a unit. Upon the ratio of these two numbers.

2. Counting with various objects, abstract counting, all combinations that include 12 in addition and subtraction, grouping and re-combining by multiplication and division processes—all these repeated until the child *knows* 12.

3. .555⅝.

4. 18×16 ×2=576, area floor and ceiling.
 18×12.5×2=450, area two sides.
 16×12.5×2=400, area two ends.
 Total area, 1426 feet, at $2.50, gives $3,565, cost of work.
 1,426 feet at $75 per M. gives $106.95, cost of wood.

5. $6,234.75+.

6. The wholesale dealer paid 100, sold at 125, but received by compromise only 40 per cent. of 125, or 50. He lost 50 on 100, or 50 per cent.

7. $37.5 \div 6 = 6.25$, area each face.
$\sqrt{6.25} = 2.5$, length of each edge.
$\sqrt[3]{2.5} = 15.625$, volume.

EDUCATIONAL INFORMATION.

Indiana sent about 150 teachers to the N. E. A. this year.

W. H. Riechers takes the principalship of a ward school in Hammond, Ind.

Professors C. M. Piercy and R. M. Grindle are conducting a six-weeks' normal at Kokomo.

H. F. Riechers who has been teaching at Ivanhoe, Ind., becomes principal at Griffith for next year.

Professor H. L. Frank, for eight years superintendent at Fostoria, Ohio, succeeds B. F. Moore at Frankfort, Indiana.

The present enrollment at the Winona lake summer school is said to be several times as large as on any previous year.

Dr. E. B. Andrews of Chicago has taken out a $10,000 life insurance policy for the benefit of the city teachers' pension fund.

Miss Nebraska Cropsey of the Indianapolis schools was chosen president of the N. E. A. department of elementary education.

Elbert Hubbard of the Roycroft book shop at East Aurora, N. Y., received the honorary degree of master of arts from Tufts college.

Yale and Harvard are rejoicing over the winning of several of the athletic games which they played near London with Oxford and Cambridge.

Hon. Elihu Root, a prominent lawyer of New York succeeds General Russell A. Alger, resigned, as secretary of war in the president's cabinet.

W. E. Stout who for the last few years has been a successful ward principal at Huntington, goes to Fort Wayne as supervising principal in the schools of that city.

Ezra E. Lollar has been chosen superintendent of schools at Garrett, Ind., owing to the resignation of George M. Hoke who will begin the practice of law at Tiffin, O.

The two candidates prominently before the Chicago Normal School committee for the presidency of that institution are Dr. W. O. Krohn and Principal W. M. Giffin.

Miss Ida Stocker died at her home in Kokomo, Indiana, July 22. She was a graduate of the Indiana State Normal, and had taught for several years in the Kokomo schools.

Professor J. B. Davenport of the Kempton (Ind.) schools and Superintendent L. D. Summers of the Tipton county schools are conducting a six weeks normal at Tipton.

Professor M. A. Bailey of the Kansas State Normal has resigned to accept a position as professor of mathematics in the New York city training school. His salary will be $3,500.

Professor E. G. Bauman, for several years principal of the high school at Mt. Vernon, Indiana, has been elected to a similar position at Trinidad, Colorado, with a fine increase in salary.

Professor John A. Miller of the Indiana University has just received the degree of Ph. D. from the University of Chicago, being the fourth person to receive that degree as a student of mathematics.

Superintendent Walter Dunn of Knox, Ind., is reelected for another year. As principal of his high school the board has chosen Jessie E. Moore of Greencastle, a graduate of DePauw and of the state normal.

The smallpox at Valparaiso, Indiana, has entirely disappeared. The reports about the school being quarantined, or anything of that kind, were absolutely false. The difficulty was stamped out immediately and the school went on as usual. This has been the most successful summer session the school has ever had. The graduating classes will be very much larger than ever before. The school will close August 10. The Hon. Charles T. Steck of Pennsylvania will deliver the address.

The Owen County Teachers' Reunion will be held at Spencer this year, on Thursday of the County Institute, September 14th. The following former Owen county teachers are expected to be present: R. J. Aley, J. B. Wisely, D. K. Goss, O. P. McAuley, Robert Spear, D. S. Kelley, Ira Baldwin, J. W. Shepherd, Fred Mutchler, O. P. Foreman, N. G. Wark, R. A. Troth, O. P. Robinson, W. V. Troth, A. D. Moffett, Mark Moffett, Chas. Meek, A. M. Stickles, S. M. Rolston, Agnes Pochin, Nellie Ahern, Judge Moffett, Webster Moffett, M. V. Gantz. Many others who formerly taught school in Owen county will be invited. The entire present teaching corps of the county will be present but the program will almost entirely be given by the visitors. It will be a notable meeting.

A four days' symposium on music was held in the Fine Arts Building, Chicago, August 1–4, with Mr. Robert Foresman as director. The purpose was to state and explain the principles upon which the Modern Music Series is based.

B. F. Moore leaves the superintendency at Frankfort, Ind., to take charge of the schools at Marion, succeeding W. D. Weaver. Professor Moore is well equipped for his work and the promotion will be pleasant news to his many friends.

Professor W. H. Hershman of New Albany, Ind., is taking a summer course of study at the University of Chicago. Miss Ora Hershman, his daughter, is at the Chicago Normal School. She will teach next year in the Indianapolis schools.

During the recent meeting at Los Angeles President Joseph Swain was made a member of the National Educational Council. Superintendent John W. Carr was made state manager for Indiana. The state directorship was abolished.

Professor A. W. Duff who has been for six years at the head of the department of physics will take a similar position in the fall at the Worcester Polytechnic Institute. Professor Duff will be remembered as an occasional contributor to THE EDUCATOR.

Miss Harriet M. Scott, author of *Organic Education*, one of the books on the Indiana reading circle this year, has resigned her position in the Detroit training school. Political annoyance and opposition are assigned as the cause. Hard on Detroit.

In the July issue it was announced that E. J. Austin had been elected to the superintendency of the Michigan City schools. It seems he was unable to secure his release from an earlier engagement and J. G. Monroe of St. Johns, Mich., takes the place.

The death of George A. Haughton occurred July 20 at the home of his mother near Russellville. He was a graduate of the Indiana State Normal, class of '96, and a very successful teacher of several years' experience. His natural ability and his enterprise made him a young man of much promise.

Professor W. H. Elson, well known in Indiana as a former secretary of the young people's reading circle, and for twelve years superintendent of schools in Parke county has been reelected to his present position as superintendent of city schools in West Superior, Wisconsin. His salary is advanced from $2,000 to $2,500.

Superintendent L. H. Hamilton, chairman of committee, announces that the diploma question in 1900 will be based on the following:—March, "Excelsior," biography of Longfellow, "The Great Stone Face;" April, "The Vision of Sir Launfal," "King of the Golden River;" May, "The Deserted Village," "Enoch Arden," "To a Mountain Daisy."

The present summer session at the Chicago Normal School is regarded as one of the most successful ever held. The attendance is large and the enthusiasm is great. This session is an interesting one in view of the fact that nearly the whole faculty now working there will close its relations with the school when the present term closes, and will commence preparations for the new school of pedagogy to open in 1900.

Messrs. Small, Maynard & Company of Boston have acquired the publications of Messrs. Copeland & Day, who are retiring from business. Among the books thus taken over are *Vivette*, by Gelett Burgess; the two *Vagabondia* books, by Bliss Carman and Richard Hovey; Stephen Crane's *Black Riders;* Miss Louise Imogen Guiney's *Patrins;* and the beautifully decorated English Love Sonnet Series.

The most cordial kind of a letter was issued by Superintendents Worley of Kosciusko county and Shideler of Huntington county, inviting the superintendents of northern Indiana, with their wives, to spend August 3 and 4 at Warsaw. Provision was made for the free entertainment of all, and assurance was given that boats, busses, hotels—the city itself should belong to the visitors. This is hospitality of the right sort.

The cause of education in Indiana will doubtless gain by the accession of Chas. D. Nason, Ph. D. He enters the faculty of the Tri-State Normal College at Angola with the highest recommendations. Born in Maine and graduated at Haverford College, he went afterwards to the University of Pennsylvania, taking professional work and receiving his doctorate. He has taught science, history, literature and drawing in Philadelphia. His work at Angola will be mainly professional, but will include some history and literature.

The conditions which Benjamin Ide Wheeler of Cornell named under which he was willing to consider his call to the presidency of the University of California, namely, that the president make all appointments in the faculty, recommend all promotions, adjust salaries, be the sole medium of communication between faculty and regents, and have regents' support, without factional opposition, in all matters which the regents may decide by a majority vote, are of the kind that emphasize the relation between

authority and responsibility. The board grants him the initiative regarding changes and appointments in the faculty, and he accepts the position. Salary $10,000 a year.

Through the courtesy of Professor Edward F. Buchner THE EDUCATOR has been favored with an extended report of the last annual meeting of the New York state society for child study. unfortunately there is not available space in this issue for the full report. One interesting feature was a tendency "to disparage the unsavored education of child study as a means of pedagogic success or scientific knowledge." A polling of about 800 teachers showed that most of them object to child study on the grounds that it detracts from even work in the schoolroom and removes the teacher from the true attitude toward the pupil. Several important papers by members of the society are to be printed and distributed throughout the year.

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It is a worthy compliment to the author of any book for all the teachers in the same department in a large high school to unite in asking for the adoption of his book for class-room use. This is what the teachers of algebra in the Terre Haute High School have done for Taylor's *Academic Algebra*, and the Latin teachers in the same school for Bennett's *Latin Grammar*. On July 5th the board of education unanimously adopted these books for exclusive use. They are published by Allyn & Bacon of Chicago, whose list of publications is strictly limited to high school and college text-books. It is the constant aim of this firm to furnish the best books for the best teachers, and the recent adoption of their books in Terre Haute is a sample of their success in that direction. Both the above-mentioned books have received the unqualified endorsement of the leading educators of the country, and are in use in Indianapolis and other prominent high schools in Indiana.

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WALTER W. STORMS, Editor.

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Vol. IX ONE DOLLAR A YEAR No. 2

THE INLAND EDUCATOR

A JOURNAL FOR THE PROGRESSIVE TEACHER

Edited by Walter W. Storms

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Chas. M. Curry

Departments: Primary, Flora J. Cooke
Mathematics, Robert J. Aley
Music, J. G. Crabbe

SEPTEMBER, 1899

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The Growth of Indiana University.

The Enrollment This Year Exceeds One Thousand.

For the second time in its history, the annual enrollment of students in Indiana University exceeds one thousand. The catalogue for the year just closed was issued in June, 1899, and the figures given therein are pleasing to every friend of higher education in Indiana. Old students have frequently said they hoped to see the day when Indiana University would have a thousand students. This hope has been more than realized, and the future is filled with even greater promises.

The exact enrollment for the present year is one thousand and fifty. Of these, seven hundred and thirty-two are men and three hundred and eighteen are women. During the year seventy-four graduates of Indiana University, or similar institutions have enrolled for graduate work. During the year 1898–99 *every county in Indiana was represented.*

The present institution began its existence at Bloomington, as the Indiana Seminary, in 1820, was made a college by act of Legislature in 1828, and a university in name in 1838. The annual attendance prior to 1850 ranged from thirty-eight in 1841 to one hundred and fifteen in 1846. From 1850 to 1884 the smallest attendance in the University was forty-eight in 1853, the largest, one hundred and ninety in 1881. The remarkable growth since that time is best told by these figures:

YEAR.	TOTAL.	GRADUATES.
1884	144	21
1885	156	26
1886	202	20
1887	263	22
1888	275	39
1889	300	41
1890	321	51
1891	394	76
1892	497	66
1893	572	81
1894	638	96
1895	771	91
1896	879	115
1897	944	130
1898	1049	119
1899	1050	126

Thus for sixteen years each year has shown a substantial increase over the preceding one. The growth began under the administration of President David Starr Jordan, continued under the administration of President John Merle Coulter, and under the administration of President Swain (1893-1899) the attendance has increased from five hundred and seventy-two to one thousand and fifty.

In view of the fact that the University does not have a preparatory department, that the standard of admission is being constantly raised, and the classroom work being made more thorough, the enormous attendance, as shown in the above figures, indicates that the people of Indiana are loyal to the head of the State's great educational system.

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THE INLAND EDUCATOR.

A JOURNAL FOR THE PROGRESSIVE TEACHER.

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VOL. IX. SEPTEMBER, 1899. No. 2.

Indiana State Board Questions. Under the new law the usual monthly examinations for licensing teachers are to be held during eight months of the year only. This will give us about five extra pages for the four months from October to January inclusive. We shall try to see that these pages are filled with matter that is at least as interesting, if not as practical and helpful, as the examination questions. Commencing with February the questions will be resumed.

* * *

Los Angeles and After. In speaking of the volumes of addresses and proceedings of the N. E. A. as they have appeared from year to year we have referred to them as great storehouses to which teachers might go and go again for suggestion and inspiration. Such an estimate is not overdrawn, but the volume is not accessible save to a very small minority of teachers. With this in mind THE EDUCATOR will present in successive numbers during the year, a few of the best things that were presented at the Los Angeles meeting. Coming thus in small doses, and at intervals, there will be a better opportunity for digestion and assimilation than the visitors to California themselves enjoyed. Not that we underestimate the wealth of enjoyment and inspiration and pleasure in attending one of the great meetings—not that we would advise any teacher against attending when attendance comes at all within one's means; but there is a grain of philosophical consolation in feeling that we could not have taken in the whole feast if we had been there. These crumbs which have fallen, so to speak, from the great educational table will be found to contain much of their original flavor and a good deal of nourishment. The feature presented this month is the resolutions which will be found on another page.

* * *

Tell Us About It. A certain firm in the East uses this catch line in its advertising: "If we please you, tell others; if we don't, tell us." The sentiment impresses us as a good one and we wish to say it just once to our subscribers. A few weeks ago we were soliciting your patronage by promising what seems to us the richest program for an educational paper that we have seen anywhere. Now that the institutes are nearly over in Indiana, Kentucky, Ohio and Illinois we are at work trying to fulfill our promises to the letter. You will be deciding month by month how well we succeed, and whether or not THE EDUCATOR is worth its price. If you are satisfied and pleased with it kindly say a good word for it to your friends. If you are not satisfied or if your paper does not come regularly please tell us frankly all about it. We own to a fair average of human frailty and when our good friends tell us something pleasant about the paper we feel gratified and grateful. But what we solicit is the helpful kindly criticism that will let us correct mistakes and do better every way.

* * *

Something New About Alcohol. Considerable thought and discussion have been aroused by the publication of a report made lately by Professor W. O. Atwater of Wesleyan University upon a series of experiments he has conducted to determine the physiological effects of alcohol. The experiments appear to show conclusively that alcohol in small quantities is readily oxydized by the body and to that extent is a food; that is to say, it yields energy. The announcement is provoking not a little protest from those prohibitionists who think they see in Professor Atwater's conclusion a justification for moderate drinking. It is interesting to remember that Wesleyan University is one of the strongholds of Methodism in America, and that it would be likely to regard with disfavor any deliberate attempt to injure the cause of temperance reform. As a matter of fact, however, the experiments have

been conducted in one of the laboratories of this school, and presumably with such cooperation and approval as the college could render, and simply in the interests of science. The leader in the protest is Mary H. Hunt, the world's superintendent of scientific temperance instruction for the W. C. T. U. We can readily understand how zealously all advocates of temperance reform would seek to hold the ground already gained, and how natural it is to protest against anything that looks like retrogression. If Professor Atwater's report carried with it anything like a recommendation of alcohol as a beverage the whole Christian world would and should rise to protest; but when he announces his discovery that one of the fundamental facts taught in most of our physiologies about the nature of alcohol is scientifically wrong we should accept the truth, at once modify our teaching at that point, and commence to insist that just because of this food property which alcohol possesses the ultimate deadly danger is all the more insidious. Professor Atwater well says that there is one thing we need never fear—the truth. If a boy is taught the baneful influence of alcohol and finds that his first experience with it does not coincide with the teaching he loses his fear and finds too late that he has an uncontrollable appetite. Readers of THE EDUCATOR will be interested to notice that the theory which Doctor Scovell has set forth in his articles on "Alcoholic Beverages" is about the same as that of Professor Atwater, though we know that at least one of his papers was written before the Wesleyan experiments were announced.

* * *

Opening Days. It seems trite to say anything about first days of school, after all that has been said; and yet, first days do come, and to a good many of our readers they will be new experiences, so that a few brief suggestions may not be amiss. One general principle to be kept in mind is that a great deal depends upon first impressions. No argument is needed to show that the expenditure of time and energy to recover ground lost by a weak beginning is the poorest kind of economy. If pupils see, as they so readily do, that the teacher knows what she is about, that she has definite ideas as to what should be done even on the opening day, and that she has prepared a definite plan which will put all students at work, they will be generally glad to fall heartily in with those plans. But pupils will be just as ready to discover any weakness or any lack of preparation or any want of confidence that the teacher may show, and they will be just as ready to make the most of it for a good time. This is a part of child nature, and young teachers are not rare who have experience with it. The surest way to escape it lies in careful preparation for the first day's program. Above all else do not rely upon the inspiration of the hour to carry you through the day *somehow*. The inspiration for such times is tolerably certain to come too late. We might go on to specify and advise certain things that should be done in the beginning and certain others that should not, such as getting acquainted with pupils before school opens, becoming familiar with the course of study, being at school early on the opening day, making no rules until they seem necessary, and so forth, but we shall feel that a larger service has been done if we can help each teacher to realize the importance of this initial preparation, and to make it in her own way. One teacher has the gift of tongue and will enlist sympathy at the start by a bright, short, simple talk. Another who knows the power of song will get the school to sing itself into the right spirit. Thus we must each know our own strength and rely upon that to secure the willing cooperation of our pupils. But, by all means, try to secure it in the morning of the first day of the term, and then be ready to assign regular work. Such a beginning is half of the battle of discipline.

* * *

Brief Items of Current History.

One of the most notable of the great national conferences was that which met in Buffalo early in July to consider social and political reforms. There was, as might be expected, wide diversity of opinion, but the trend was clearly in favor of more direct democratic methods in government, with the cooperative commonwealth as the ultimate ideal. The theory of initiative and referendum found much favor. Trusts were regarded as inevitable results of the competitive system, and many thought that they mark a transition towards public ownership of the means of production. Plans were laid and a $20,000 fund was subscribed to establish a school of politics and economics. Professors Bemis, Will and Parsons, recently dismissed from the Kansas Agricultural College, will be identified with the new school which is to be located in Boston. The purpose is an independent study of political and economic questions.

* * *

The Peace Conference at The Hague, after a session of two months, found it impossible to agree on the question that it was called to con-

sider, namelv, that of disarmament. The truth seems to be that none of the great powers is willing to disarm, and Russia least of all. This is about what the delegates expected. But the thing that was not expected, even by its most sanguine advocates has happened in the tentative agreement to establish a permanent court of arbitration for the nations of the earth. The agreement is to be submitted to the various powers for ratification. The proposed arbitration is to be optional and not compulsory. The only power to enforce the decisions of this court is national honor and commercial interests. The court is to sit at The Hague and will consist of four persons named by each power ratifying the agreement. The arbitrators hold office for six years, but may be reappointed. If this court can be made effective large armaments will gradually grow obsolete and useless.

* * *

A most interesting piece of arbitration is now in progress in Paris; namely, the one which is to decide the ownership of 669,000 square miles of territory between Venezuela and British Guiana. Mr. W. T. Stead in the August *Review of Reviews* says, "Sir Richard Webster is now in the midst of a sixteen days' speech setting forth the British view of the case. Ex-President Harrison will take at least as long to reply on behalf of Venezuela. Then Sir Robert Reid will have his turn and another American will follow. It is very prosaic, no doubt, and very sensible, and no one in the Old World or the New pays a scrap of attention to the court and its orators. How different it would have been if, instead of arguing it out quietly in a court of arbitration, armies and navies had been set in motion and thousands of men had been slaughtered. Then the whole world and all the world's newspapers would have been full of the controversy, for nothing interests the living so much as the taking of life."

* * *

The close sympathy that exists among nearly all labor organizations renders them peculiarly sensitive to local disturbances. Hence it generally occurs that troubles in one section act like a signal for outbreaks in other sections. So it happens that the street-car strike in Cleveland, the Coeur d'Alene riots and the trouble on the elevated railroads in New York were all going on at once. The last grew out of a charge that the company required more than the legal ten-hour day from some of its employes. In Cleveland and Idaho the trouble had its origin in the employment of non-union men. The growing frequency of labor disturbances and the increasing seriousness of results seem to justify the suggestion that teachers should be well grounded in principles of fairness and justice, as they relate to these matters, and should teach them to their older pupils. Have workingmen the undoubted right to organize? Have those who do not organize the undoubted right to seek work where they choose? Has the employer the right to hire whom he will? These seem to us proper things to teach if education is to be practical and if men are to have standards of right rather than bias to determine their course of conduct.

* * *

A serious famine, the result of long continued drought, is raging in eastern Russia. The inevitable fever and scurvy are among the attendant horrors. The plague is said to be worse than that two years ago in India, and Russia appeals to the world for help. . . . A terrific hurricane passing over the West Indies early in August devastated large sections of Porto Rico. Hundreds of lives were lost and property to the probable value of $75,000,000 was destroyed. . . . This is the rainy season in the Philippines, and the campaigns are not being vigorously pushed, though General Otis is holding the territory already taken. It is the evident purpose of the war department at Washington to have 50,000 men in the field by the close of the rainy season with the hope of bringing the war to an early close. The press censorship is severely criticised for repressing news from publication that leaves the public with a false idea of actual conditions. The Dreyfus case is in progress, and the second trial bids fair to become as famous as the first. The shooting of M. Labori, one of the prisoner's lawyers, seemed unfavorable for the defense, but the wound was not fatal, and a turn in favor of Dreyfus seemed to come when Labori returned to court.

* * *

Education for the Twentieth Century.

It is altogether natural that the beginning of a new century should mark a new era in many things because as we approach the line between the old and the new the tendency increases to refer everything to the next century. It is like turning a new leaf for the new year. We know perfectly well that we shall cross the line unconscious of its presence unless we sit with watch in hand, or perhaps we shall sleep through the transition unless the booming of cannon or the ringing of bells may awake us. But after all, this natural tendency to think what we

shall be and how we shall do when the new time may have come does influence conduct and conditions by causing us to inquire into them more closely than usual.

The search for educational ideals is not a new one, nor has the failure to find one that is perfect been due either to indifference or to satisfaction with the old. The following expression by Colonel F. W. Parker well states the need for something better, and at the same time offers a keen criticism upon present ends and aims: "Wanted—an end and aim, a clear distinct goal for education! For this there is a magnificent reward! In every other profession there is a definite aim. The doctor has sickness to cure. The minister has souls to save. What is the end and aim of education? The aim upon which the practice of to-day is based is knowledge. Witness the examination, the course of study, the public opinion that demands that the child shall go through the book." Leaders in education everywhere are unremitting in their efforts to find out what is best, and it seems easy now to say that when the twentieth century comes we shall plan anew; conditions may not remain just as they are and education may need to be modified to meet the demands of the new time. This is wrong. It is true enough that conditions may change, or rather let us say it is certain that they will change, but it is at least one function of education to help determine and direct such change.

In a late issue of the *Wisconsin Journal of Education* appears an article on "The Educational Demand of the Twentieth Century. —A Common Sense View," by Frederick W. Nash. It is a plea for the practical in education, as the subtitle intimates, and is based upon the proposition that "utility is the test to which the education of the future must submit." If *utility* is the best ideal for life, if a utilitarian program is the one that will help men and women into the largest, happiest, fullest living, if mere money-making is the chief end of existence, then by all means exalt utility in the schools. *Provided*, however, that practical education, so-called, does fit best to meet the demands in a world where competition is sharp, keen, and merciless. To question Horace Greely's statement that he knew over a thousand expensively and thoroughly educated men in New York who were utterly unable to earn their own bread would be ungenerous, indeed, since Mr. Greely is not here to defend himself; but if these men were so incapable with education we may at least wonder what they would have been without it. Equally is it bad logic to hold up a self-made man as an argument against education. An educated failure, like an uneducated success should be judged finally by the *ad hominem* test. Indeed, it is not seriously claimed any longer that the man who has *only* the business education, other things being equal, can successfully compete in the long run with the man who is broadly educated. We do not underestimate the value of practical, of business, or even of technical education. The more of this the better, but by all means let it rest upon a foundation of the most liberal education possible.

Mr. Nash says "The American people are not lost to beauty, art, or the æsthetic side of life." Let us hope that this is true in a very large sense. We are just reaching the point in our national life where we ought to have time for these finer things, but assuredly nothing else will so soon stifle them as the growing intensity in the commercial struggle. Already the process of crowding out the weak is well under way, but they die so quietly in the dark corners that we see but little of it. And yet this is the logical result. Moreover it is not men who are demanding of the schools a quicker, surer, more effective money-making equipment, but the absolute needs of the time, the stress of an intense commercial spirit. We cannot blame any one. The necessity is upon us all. The breadwinner of every home is driven to his greatest efforts lest another outdo him in the race. If a man goes to an employer for work it is not so much a question of who he is or what he is, but what he can do. To educate for business, strictly, means that culture must look out for itself. The few have time for music, literature and art; the masses have not.

Does it not seem that the schools should help lead in these things, that they should create ideals rather than follow blindly those set up by the god of this world? Every case of education for the practical alone, with no regard to culture, simply defers the better day when even the poor shall

> "have some part
> In yon sweet living lands of art."

Schools and teachers ought to stand for the principles of altruism. We may all well take a lesson from the kindergarten. The educational needs of the twentieth century

will depend upon the ideals of the century, and these ideals *may* be what we will. It will make a vast difference if the next generation of children is schooled chiefly to mere utility, which is selfish in purpose and effect, or to the larger view that helps men live for others as well as for self, for happiness as well as for gain.

* * *

Trained Teachers.

The work of training teachers is yet but fairly begun. Despite the numerous normal and professional schools here in the north central states and in some parts of the East the supply of well-equipped teachers falls far short of the demand. At first thought such a statement may appear to be in conflict with the fact that large numbers of teachers are unable to secure positions. This inability is due largely to two causes; first, many positions are held by teachers who are not trained; second, teachers who are trained are looking naturally enough for the best paying places. These places are in the city schools and there is where we find the surplus of the best qualified teachers. In the city of Boston, for example, where vacancies are supposed to be filled mainly by graduates from the Boston normal school, Superintendent Seaver, in his last report, shows that the number of places to be filled each year is about fifty, while the number of graduates is about twice as large. This makes a growing army of disappointed candidates who believe that their failure is due to social or church or political favoritism. Mr. Seaver devotes ten or twelve pages to a discussion of this state of things and to the means of remedy. His first suggestion is to reduce the number of pupils admitted to the city normal school. As was urged in THE EDUCATOR last month, he declares that it is better to let the disappointment come early; let admission be confined to those best qualified by nature as determined in a competitive examination. It is interesting to note that notwithstanding his loyalty to the city Mr. Seaver maintains the right to appoint the best available teachers whether they come from the Boston normal school or not.

In the July number of the *Wisconsin Journal of Education* we find some statistics different from those that come from Boston, but not less interesting. There are over 10,000 teachers in the state of Wisconsin with an average tenure of about three and a half years. That requires about 2,800 new teachers yearly, of which the normal schools do not furnish more than 600. A consideration of these figures shows that most of the training in the seven normals of the state is directed toward preparation for teaching in the grades, and that there has been practically no training for the rural schools. An attempt to meet this need has resulted in establishing a county school designed to prepare teachers for the best possible work in rural districts. The county of Marathon in which the experiment is being tried appropriates $2,500 a year while the state gives $1,250. The experiment is now about two years old and has won the firm support of the people of the county. This is not intended to compete in any way with the normal schools already existing, and there is careful legislative provision to keep one from developing into the other. Thus the Wisconsin system now contemplates (1) a professional school to prepare teachers for high schools and academies, (2) normals to prepare for the grades, (3) schools to prepare exclusively for the kindergarten, (4) training schools to prepare for ungraded schools in the country. The system certainly includes some features worth thinking about. Of related interest is a volume in Appleton's Education Series on *The School System of Ontario* by Geo. W. Ross.

* * *

Signs of Progress.

In his report on "The Educational Progress of the Year," Dr. Nicholas Murray Butler of Columbia University considers the question chiefly in the light of books on education published during the year. He well suggests that the full array of the main events of the year would be formidable, and perhaps less interesting than Homer's catalogue of the ships, so that there is a good and sufficient reason why he should limit his discussion in a single paper chiefly to the educational books. It may be presumed that there is a fair if not a large demand for these books and that they express, therefore, a good deal of the educational interest and spirit. And yet their use will be confined almost wholly to teachers; that is, they are professional in character and in purpose.

But there is another feature of the educational progress, which, if it does not go so deep down into the professional life is surely

broader in its influence, and perhaps a more hopeful sign of the educational times than the professional books; and that is the periodical literature on matters that pertain to education. The people who manage and edit these great periodicals keep a middle finger carefully on the popular pulse, and as a matter of pure business they supply the popular demand so far as may be consistent with the character of their publications. It seems, therefore, quite significant to find in the literary magazines not only frequent contributions on educational subjects, but even whole editions devoted to such subjects and specially announced as educational numbers. This, indeed, is in accordance with our traditions. We have long boasted of our free schools and of popular education, but, for the most part, men have been too much engrossed in their business or their trades, and women too much with their homes or with society to find time for an active interest in the schools. It is too early to say even now that the millennium has come, but interest grows at a great rate, and the periodicals are doing much both to increase and to foster it.

We have been much interested in looking over the periodicals for 1899 thus far. The number and variety of articles bearing directly upon educational questions is truly surprising, not to say bewildering. There is barely room here for the briefest enumeration. Without any purpose of making comparisons it may fairly be said that among the literary magazines the leader in things educational is *The Atlantic Monthly*. It is a great educational power. *The Outlook* well says "*The Atlantic* strikes the note of leadership." It is deliciously aristocratic in price, and yet moderate enough considering quality and helpfulness. Especially may we name "President Eliot as an Educational Reformer," "Country Schools" and part of the series by William James on "Talks to Teachers on Psychology." *The Outlook*, too, is a leader, and while it has a yearly educational number like that of August 5 it does not wait for this special occasion to express itself upon subjects of schools and education. The issue just referred to contains, besides Doctor Butler's report, an editorial on "The Educational Situation," "American Education at the Paris Exposition," "Educational Signs of the Times," "The Line of Educational Advance," "Yale as a University," "The University of Edinburgh," "Vacation Schools and Playgrounds," and biographical sketches of Benjamin Ide Wheeler, W. H. P. Faunce, and George Harris—three new college presidents. Other special articles in *The Outlook* during these seven months are "The Educational Situation in the West" in the issue of January 7; "Picture Study in Education," January 21; "Should the College Train for Motherhood," February 25; "Woman's Education," March 11; "Home and the Schools," March 25; "Hygiene for Pupils," April 22; "An Educational Colony," May 27.

The Independent, in its issue of January 19, has "The University and the Common Man," and "City Schools and Politics." February 9 it has "Education in the South," and in August 10 "Perils of the Public Schools."

Perhaps the article that has aroused most comment, or we might say most protest, during the year is that by Mrs. Lew Wallace in *The Ladies Home Journal*, entitled "The Murder of the Modern Innocents." Somewhat similar in character, in that it was destructive criticism, was Mrs. Rebecca Harding Davis's "Curse in Education," which appeared in the *North American* for May, and which was so effectually answered in the July *North American* by Mrs. Van Rensselaer. In the same periodical for April we find "Public Schools and Parents' Duties."

Current Literature furnishes "Education as a Necessity." "Shall We Banish Books?" "The True Specialist," "The Bible in Education," and "Education as a Preventive of Crime."

In the *Forum* appear "Social Ethics in Schools," January; "Education and Culture," February; "Teachers in Common Schools in Larger Cities," June; "Why Teachers Have No Professional Standing," June.

Harper's Bazar contributes "Public and private Schools," March 4; "Fear of Education," July 1, and "The Choice of a School," July 22.

In *Public Opinion* may be found "Ethical Discipline in Public Schools," January 26; "Over-Education," May 25; "The Scholar in Politics," June 8, and "Usefulness of the University," July 13.

"Does Education Produce Pessimists?" appears in the March *Arena*, and the July number of that periodical is an educational number with several appropriate contributions.

In the February *Century* we read of "Charles Dickens's Work in Education;" the April *Nineteenth Century* had "Higher Education and the State"; *The Fortnightly*, May, had "The Teacher Problem", and we must include *The Dial*, which is wont to speak out so clearly its positive convictions on matters of this kind, as it did on April 16 in "The Educational Outlook."

This enumeration is by no means exhaustive. It does not include the multitude of minor publications which, like the local press everywhere, are closely interested in the schools and their work. It will be seen, too, that no reference has been made to the educational journals themselves, nor to the *Chautauquan* with its numerous progeny, nor to professional publications of any kind. And finally, the articles named are nearly all general in character and interest. Those on technical subjects, those on special phases of education, such as kindergarten, manual training, Indian schools, and so forth, are omitted. Considering all these facts, the amount of reading on general educational subjects that is going before the millions of readers each month is tremendously significant.

MY MINDE TO ME A KINGDOM IS.

MY minde to me a kingdom is;
Such perfect joy therein I finde
As farre exceeds all earthly blisse
That God or nature has assignde;
Though much I want that most would have,
Yet still my minde forbids to crave.

Content I live; this is my stay,—
I seek no more than may suffice.
I presse to beare no haughtie sway;
Look, what I lack my mind supplies.
Loe, thus I triumph like a king,
Content with that my mind doth bring.

I see how plentie surfets oft,
And hastie clymbers soonest fall;
I see that such as sit aloft
Mishap doth threaten most of all.
These get with toile, and keepe with feare;
Such cares my mind could never beare.

No princely pompe nor wealthie store,
No force to win the victorie,
No wylie wit to salve a sore,
No shape to winne a lover's eye,—
To none of these I yeelde as thrall;
For why, my mind despiseth all.

Some have too much, yet still they crave;
I little have, yet seek no more.
They are but poore, though much they have,
And I am rich with little store.
They poor, I rich; They beg, I give;
They lacke, I lend; they pine, I live.

I laugh not at another's losse,
I grudge not at another's gaine;
No worldly wave my mind can tosse;
I brooke that is another's bane.
I feare no foe, I fawne no friend;
I lothe not life, nor dread mine end.

I joy not in no earthly blisse;
I weigh not Cresus' wealth a straw;
For care, I care not what it is;
I feare not fortune's fatal law;
My mind is such as may not move
For beautie bright or force of love.

I wish but what I have at will;
I wander not to seeke for more;
I like the plaine, I clime no hill;
In greatest stormes I sitte on shore,
And laugh at them that toile in vaine
To get what must be lost againe.

I kisse not where I wish to kill;
I feigne not love where most I hate;
I breake no sleepe to winne my will;
I wayte not at the mightie's gate.
I scorne no poore, I feare no rich;
I feele no want nor have too much.

The court ne cart I like ne loath,—
Extreames are counted worst of all;
The golden meane betwixt them both
Doth surest sit, and feares no fall;
This is my choyce; for why, I finde
No wealth is like a quiet minde.

My wealth is health and perfect ease;
My conscience clere my chiefe defence;
I neither seeke by bribes to please,
Nor by desert to breed offence.
Thus do I live; thus will I die;
Would all did so as well as I!

—*Sir Edward Dyer.*

A PARALLEL BETWEEN THE LIFE AND WORK OF PESTALOZZI AND THAT OF DR. E. A. SHELDON.

By HERMANN KRÜSI.

INASMUCH as these two men are now held in revered remembrance as reformers of the public schools and the methods of teaching the one in the German states of Europe, the other in the United States of America—it will be of interest to indicate in what respects the younger of these men, Dr. Sheldon, has earned the title, the Pestalozzi of America.

RESEMBLANCES.

Zeal. Both derived their fundamental principles and the zeal for the self-sacrificing work of their lives from the depths of their own inner feelings and from personal observation of the conditions which surrounded them. They made no demand on book-wisdom and learnedness, though they had received instruction in the public schools and at the University—instruction which was very faulty, it is true, in the public schools, and in part faulty at the University.

Unselfishness. Both revealed from their youth up a marked unselfishness of character and readiness to be of service to others. A beautiful proof of this trait is shown by Pestalozzi in his self-sacrificing care of the orphans and little beggar-children in Neuhof and Stanz; while Sheldon's first efforts as teacher were likewise directed to the education of neglected children, whom he gathered about him from the streets of Oswego.



These cuts are used by courtesy of Mr. C. W. Bardeen.

Steadfastness. Both possessed untiring perseverance and great strength of will in carrying out their plans. Neither the blind prejudice of the masses nor the bitter attacks of the learned were able to discourage them. Both were convinced of the sacredness of their mission, to which they could not be unfaithful.

Attitude toward others. Both possessed the gift of being able to win the sympathy and cooperation of noble men and women, and to fill them with interest and

enthusiasm for the work of education. Both, as worthy sons of a republic, preserved throughout their whole lives a charming modesty and simplicity of manner, valuing men not according to their rank or social position, but according to their efforts and service for their fellow-men. While Pestalozzi often stood in touch with princes and other personages of high office, who rendered possible the introduction of his method into their states, Sheldon had to do more with school-boards elected by the people, who regarded his school as a model in organization and instruction, and whose deliberations were often influenced by his counsel and experience.

Home. Both were of humble origin, Pestalozzi being the son of a surgeon, Sheldon of a farmer. Both had the good fortune to marry educated and noble-minded women, who often helped them by word and deed in their difficult labors, and revived their spirits in discouragement. The results of good family-training are less to be seen in Pestalozzi's stem (which completely died out by the death of Oberst Pestalozzi in Zurich) than in Sheldon's five children. Of the latter, the oldest daughter, Mary Sheldon-Barnes[1], has become noted as historian.

Assistants. As a somewhat striking coincidence it may here be remarked that both Pestalozzi and Sheldon, in endeavoring to work out their methods and introduce them into the schools, received the assistance of a Hermann Krüsi—father and son. The younger Krüsi little thought, indeed, when he first set foot on American soil, that a task similar to that of his father sixty-two years before would be assigned to him; and assigned moreover by a man of whose existence he had known as little as had the elder Krüsi of Pestalozzi.

[1]Like her father, she died "with the harness on," being engaged in historical research at the British Museum in London.

Long life and recognition. Both Pestalozzi and Sheldon were privileged to continue their work to a good old age, and to see the



fruit of their labors. The seed of popular education sown in Prussia and the other countries of Germany, clearly evidenced the recognition which was accorded the venerable Pestalozzi; such was also the case with Sheldon, who saw in all parts of the Union the ideas and methods taken up which he had introduced at Oswego. That the mania of persecution which attacked Pestalozzi in the later years of his life, seemed even to himself to place his efforts in an unfavorable light in spite of his undoubtedly great achievements, was due to a certain nervousness of temperament —a characteristic in which we perceive at once a *difference* in the characters of these two men.

DIFFERENCES.

Individuality. Pestalozzi was remarkable, even as a boy, for the sensitiveness and excitability of his nature, inspiring him, on the one hand, with enthusiasm for every step of progress toward freedom and justice, and with sympathy for the poor; but on the other hand, filling him with impatience and anger toward the oppressors, and toward all who opposed the theories which he with youthful fire and vim so staunchly supported. Sheldon, however, had a quiet, peaceable disposition. When he sought recognition for his ideas he preferred to appeal to the intelligence and convictions of his listeners, rather than to play upon the cords of emotion; in the latter art Pestalozzi with his almost magnetic power of attraction by far excelled.

Life-work and sphere of activity. Pestalozzi, who as he himself says did not get his ideas about methods and education from books (where he might perhaps have found a few), considered himself the founder of a new method of instruction, in harmony with the natural laws of the mind. In working out this method he often fell into error, it is true, but gradually, with the assistance of his fellow-workers, he followed up the right course, and by means of observation and development unfolded in his pupils powers which aroused astonishment in those who visited his institution. Thus the great service of Pestalozzi consists in the application of the recognized laws of the mind, and in the step-by-step upbuilding of the child's powers in the elementary instruction of the public school.

Sheldon on the other hand was already convinced from the very beginning of his labors, of the value of the Pestalozzian method of instruction, and was accordingly more concerned in introducing the necessary measures, which by their objective character assumed a strikingly practical form. Inasmuch as he was occupied during his entire pedagogical career, in superintending either the city public schools or the State Normal School, he necessarily lacks in certain respects the absolute freedom for experimental investigation or for the introduction of new means of instruction, which is enjoyed by the conductor of such a private institution as Pestalozzi's always was. Sheldon was therefore obliged to proceed cautiously and systematically.

Order and system. The most enthusiastic of Pestalozzi's admirers have never ventured to deny his faults in respect to such things as personal neatness, care of the clothing, financial matters and even the expression of ideas. To this lack of order and clearness are to be attributed many unfortunate events of his life. A principal who neglects the financial affairs of his institution, for example, runs the risk of leaving them in the hands of a man who will turn them to his own advantage. Something similar takes place, also, when one finds it necessary, in order to make one's confused notions on education comprehensible to an intelligent public, to engage the services of another man for this purpose—especially if this spokesman is inclined to interpolate his own views, and especially if these views are often mere philosophical ideals in glaring contrast to the actual facts. . Such was Pestalozzi's experience; whereas Sheldon, as superintendent of City Schools and as principal of a State Normal School, was compelled to express in clear intelligible terms the program of instruction and to keep close watch of its execution and of the whole school-organization.

It is natural that in the comparison of men of different nationalities there are national as well as individual differences to be taken into consideration. This explains in part Pestalozzi's ideal trend of mind, as contrasted with Sheldon's more practical tendency. There is also a difference in regard to religious views, in that Sheldon followed the example of his fathers and forefathers and clung to the orthodox faith, while Pestalozzi recognized the Gospel of Love as the true essence of Christianity. Still, it hardly needs to be said that in spite of his never intolerant preference for the orthodox exposition of the Bible, Sheldon observed to the fullest extent the duties of the Gospel of Love.

[The article above is by *Hermann Krüsi* (formerly of the Oswego Normal School) in the *Zeitschrift für Philosophie und Pädagogik* April, 1899, Jena, Germany, translated by *William R. Bishop*, University of Jena.]

THE KINDERGARTEN AND THE CHILD.[1]

By ELIZABETH HARRISON.

A FEW years ago I spent a never-to-be-forgotten evening with an earnest young educator who has since become world-famous as a psychologist. It was but natural that our talk should, early in the evening, drift toward our common subject —the study of the child. He soon led me into giving illustrations of some method by means of which kindergartners study their children, dwelling chiefly upon the two outer manifestations, the attitude and gesture of the child, as expressive of his inner, emotional condition, and the hand work done by children, as indicative not only of their degree of mental grasp of any given subject but as also, revealing many traits of character. I, being a kindergartner, naturally in the course of conversation sketched productions of the hand work of my children to illustrate this, that or the other point, and picking up a pair of scissors which lay near by, rapidly cut other illustrations to show how we learn to study any creator by his creation even in such minor things as the kindergarten hand work. It was late before he rose to leave and, as he did so, he gathered up the marginal pieces of the newspaper and the backs of envelopes upon which I had explained my points and turning to me, said, "May I take these with me for further study? You have convinced me that the kindergarten is the future laboratory of the psychologist."

In sharp contrast with this I recall another interview which I had with another man who had already risen to distinction in the educational world. In the course of our talk together he said, "Kindergartners are *so* narrow and fanatical that they absolutely refuse to see *any* good in the child-study movement and thereby shut their eyes to much that would be helpful to them."

The opinion of each of these two men is worthy of sincere and respectful attention and their opposite ideas of the kindergarten must suggest, to any thoughtful person, the fact that they had in mind good and poor kindergartens and were therefore looking at two entirely different things.

NEED OF DISCRIMINATION.

I have come this morning to speak to you concerning the best that I know to have been accomplished in our field of labor, frankly acknowledging that much poor work, indeed frequently injurious and extremely detrimental work, is done under the name of the kindergarten, as well as much aimless and oftentimes confusing work is done under the banner of child-study.

We meet together that we may each get the best that has been attained by the other, not simply to criticise the inferior phases of either line of work. No advocate of the recent child-study movement could possibly deplore the senseless and pernicious work which goes on under the name of child-study, any more than does the true kindergartner blush for such of the arbitrary drill work on the one hand and the sentimental coddling on the other which is called "kindergartning."

Is it not just for us to begin with the statement that in *all* educational work *insight* is to be considered as well as *induction*. The latter brings accuracy as to detail, tests methods as to their practicability, and places each individual teacher upon his or her metal and is, therefore, invaluable. It has its danger side of which I will speak later. The former, insight, brings a sense of stability in the thought-world, which has been verified by generations of observing and conscientious men and women, and thus leads to the mental attitude of reverence, and therefore is indispensable to the true teacher. It seems to me that a mind is *intoxicated with conceit* if it does not admit the result of the struggles and victories in the field of education which the race has handed down to us to be of such value that it must not be overlooked in our new view of things.

One strong argument for the kindergarten is that its standpoint of religion, of ethics, of sociology, agrees with the standpoint which the race has gained on these great subjects. I would say in passing that to me it has explained the new view of science and prepared me for much of the so-called new psychology. I am speaking now of the theory and writings of Frederick Froebel, the founder of the kindergarten system, not

[1] Delivered before the Child-Study Conference, July 7, 1899, at Chicago.

of the many variations from, and sometimes violation of, the same which one often sees advocated by his followers.

SOME MISCONCEPTIONS.

I was in a so-called kindergarten not long ago where the little children were kept upon the circle in rhythmic exercises one hour and ten minutes. Toward the latter part of this period a number of the children showed signs of fatigue, one little boy stoutly asserting that his legs would not hold out any longer, and one little girl plaintively sighing, "Oh, I am so tired. I wish I could sit down." To these remarks the teacher was as oblivious as she had been to the other more silent signs of fatigue. Later on in the morning the young woman announced herself as perfectly devoted to Dr. Stanley Hall and his methods, and stated that she was carrying out his ideas of rhythmic exercises in her work with the children.

No sensible person would for one moment ever think of criticising Dr. Stanley Hall for this piece of atrocious work, and yet I have heard Froebel accused of *pantheistic* philosophy simply because some of his followers had become confused concerning his explanation of his view of nature, though in the reminiscences of him which the Baroness Marenholtz Von Bulow has left she records a conversation in which he emphatically denies any pantheistic views and explains clearly the monotheistic nature of his belief. Again, I have listened while well-known educators claimed that the kindergarten shut the child away from nature, knowing as I did that one of Froebel's strongest points was to show the mother or kindergartner how to lead the child into a loving observation of nature; that almost all of his games were played out of doors and that his illustrations were taken from nature and his constant appeal made to keep the child closely in touch with nature. A more serious misunderstanding of Froebel is that which many physiological-psychologists hold; namely, that he does not advocate starting the training of the child from some experience which the child has personally passed through, or, in other words, basing his mental development first of all upon sense-impressions. No one who has thoroughly studied Froebel's "Mother-Play Songs" could misunderstand him on this point. The book is intended, above all things else, to show the mother or kindergartner *what sensations and what experiences* to emphasize and unfold into their relation to universal properties of matter or universal activities of mankind *and how not to dwell* on incidental and ephemeral experiences.

But, to return, it seems to me that the *child-study* movement emphasizes the value of *induction*, though the best representatives of this movement acknowledge insight, whereas, the *kindergarten* movement emphasizes *insight*, though the best representatives of this movement recognize and make use of inductive work also.

CHILD PSYCHOLOGY.

The second point of difference between these two great educational movements is to be summed up in the term "child-psychology." I speak with great hesitancy on this subject as I know there is a large range of varying opinions as to how far the child's mind differs from the adult mind, to be found among those who, broadly speaking, are classed as the "child-study people." I do know, however, that the kindergarten students firmly and earnestly believe *that mind is one and the same thing in the child and in the adult, differing in degrees of unfolding rather than possession of essentially different characteristics.* Without stopping to dwell too long upon this subject I would ask that the following questions be earnestly considered: Whence comes "child psychology" except from introspective deductions in the adult mind of manifestations seen and studied in the child world? Whence comes our clearly defined knowledge of the fact that representation of sense impression creates mental images save from the knowledge of this process in the adult mind? How are we able so clearly to define the place which make-believe imagination and constructive imagination have in the child's development, except that these two stages of mental growth have been discerned and differentiated in the adult mind? In fact, is the study of psychology possible except by the introspection of the adult? No one will for a moment claim that the child's emotions, thoughts, or volitions are *equal* to those of the adult but by every law of the universe they must be of the same nature, though not fully developed; else there would be nothing in common between the adult mind and the child mind and therefore the latter could not be understood by the former. A whole must be greater than any of its parts but it

must include its parts. Let us, therefore study, for practical purposes, that which is common to both the child mind and the adult mind.

EXPRESS OR CREATE?

We hear continually the statement that *expression* is the chief end of education. This I think is very misleading and entirely untrue. If any of you has ever been compelled to sit upon a hotel veranda for half an hour, or, more unavoidable still, to ride in a railway train for an afternoon with a woman who could chatter on and on forever and yet say nothing that was worth listening to, you would realize the inadequacy of expression—the power to express in outer form her inner being certainly had been neglected. Is not the aim of education the power to *create* rather than merely the power to express? By this I mean that power which each human being possesses, though in vastly varying degrees, of not only taking the outside world into himself and reproducing it in his own way, of transforming it as it were into a new thing by coloring it with his own personality as well as bringing forth original additions to what he has received from without. I think all child-study students and all kindergartners would agree upon this one great, profound, and extremely practical point, *creativity.* In order that the child may create easily and to his fullest extent, there are three things which are necessary. First, clear impressions; second, ease of expression; third, high ideals; therefore the most of this paper will be upon how to aid the child along these three lines.

HEALTH OF FIRST IMPORTANCE.

In order that he may have clear impressions we must see to it that his "native tools," that is, his eyes, ears and hands, are in good condition. The physiological-psychologist has done an invaluable thing for the cause of education in insisting upon the testing of these tools before giving a task in which they are to be used.

I remember early in my experience as a kindergartner that I had in my charge a very sweet, lovable and conscientious little girl whose hand work was the torture of my existence. She did everything else well and showed fine mental powers and good physical force, but it seemed impossible to teach her how to fold a piece of paper straight or to thread a needle. After many weeks of trying, which often brought tears to both of us, I finally decided that there must be some defect of eyesight and accordingly walked with her to her home one noon. Apologizing for my seeming intrusion, I told the mother of our difficulty and suggested that she take her daughter to an oculist and have her eyes examined. She instantly resented it as a implication upon the heredity of the child, insisting that short-sightedness was not a defect of either her family or that of her husband's. I waited until the storm of loyalty-to-blood had subsided and then asked her if she would not, as a favor to me, let the little girl's eyes be tested; that no harm could possibly be done and a great injury might be averted. By dint of one or two touching little incidents in which I showed how faithfully the child had struggled to have her work as well done as that of the other children and yet had failed, I finally succeeded in extracting from the mother the promise that the eyes should be examined; though her parting remark was "I am quite sure there is nothing the matter with her eyes; we have never had the least difficulty of that sort in our family." Three days afterward the mother was generous enough to come to me and thank me for my insistance, telling me that the oculist said the little one would have been totally blind in six months if remedies had not been applied. This happened before the days of official physiological testing. One of my own childish remembrances is that of many times having shed, in solitude, bitter tears over being misunderstood because of a slight defect in my hearing which was never spoken of and which oftentimes caused me to appear obstinate or heedless. Therefore I repeat it, the children of the future lie under deep obligations to the physiological-psychology of to-day which insists upon the proper examination and testing of these tools of the body, but I cannot drop the subject without giving the word of warning that too much attention may sometimes be given to this subject and children may often be made painfully self-conscious or morbid to a degree that is agony. In the scientific pursuit of facts the sensitive nature of the child is sometimes overlooked. In one of our large cities which shall be nameless here, the women's club enthusiastically took up the subject of child-study and devoted many weeks to the particular phase of the study of defects of children, having the supervisor of

the primary schools bring to their Wednesday afternoon sessions each week, some one deformed or defective child whom they examined, questioned and tested until an eye witness of these deeds of barbarity told me that she, several times, had to leave the room because she could not stand the look of pain and suffering upon the face of this or that child as its defects were thus dragged out before a strange public.

FUNDAMENTAL TO ACCESSORY.

But beyond the bodily tools of the senses and muscles there are other tools which are necessary for clear impressions; namely, the properties of matter in the world about us. All material advance in civilization is the result of man's increasing mastery over matter. If there are to be clear, vivid and lasting sense impressions there must be conscious grasping of the similarity and differences of various objects, both as to their inner and their outer properties as well as a conscious command of the forces by which these objects are formed and transformed. This can best be brought about by having the child early become familiar with what, for the want of a better term, I will here call the fundamental properties of matter. Much has been said about fundamental and accessory muscles of the body and the necessity of developing the former before the latter but it is just as necessary that the fundamental properties of form, color, etc., shall come first in the mind of the child if he is not to have vague, confused and distracting ideas concerning the world around him. Thus we can see the value of giving to the child a few, clearly defined geometric forms which with a little skill can be transformed into various objects to suit the imagination or play rather than of giving to him complex and artificially manufactured toys each with minute details peculiar to itself. From fundamental to accessory is as necessary in the form world as in the bodily development.

PLAY.

So, too, I would say in that much discussed subject, the child's play. As we test and become familiar with the essential values and chemical affinities of the acids and alkalies in the laboratory more easily than in their hidden processes in nature, and turn to the master poems of the world for our study of the essential motives, conflicts and emotions of humanity, for a clearer study of these than any which can be furnished by the artificial and partly concealed inner activities in the lives about us, so, too, in that wonderland of play in which the child dwells most freely and thoroughly himself, we learn that not only here he spontaneously shows forth his real nature but that by means of play he is also trying to take into himself the meaning of the great human world about him. Mr. Frederich Burk, in his interesting pamphlet in which he records a year's experiments in four kindergartens in Santa Barbara, divides the plays and games of children into plays of physical activity, representative plays and traditional games. Sixty-seven per cent. of the games spontaneously played were games reproducing the life about them, or the dramatization of that told to them in story or heard of in conversation. Almost any other set of statistics would show the proportions. The question which confronts us is, shall these valuable, spontaneous efforts of the child be guided wisely, gently and intelligently toward the fundamental activities of the human race? I once heard a famous lecturer say that plays which were spontaneous with the child were those which could be seen in the alley and the barnyard. I longed to ask this same gentleman if he had ever seen a play enacted in an alley or barnyard which did not contain more or less of the traditions of the past or which was not presided over by some imperious, self-appointed leader. Is there such a thing as absolutely *free play* where two or more children play together? It seems to me this whole matter of play with children resolves itself into these two alternatives: Shall he play the accessory, incidental activities by which he may chance to be surrounded or which some playmate may suggest, or shall he play the fundamental, great racial activities which have elevated mankind out of savagery into civilization? *It is the manner in which play is carried forward which makes it interesting to children but it is the content of the play which makes it educational or non-educational.* Let us not mistake these two points. An enthusiastic teacher can make any subject interesting, whereas the mere fact that an activity is interesting to a child does not prove that it is beneficial to him; children love to eat candy; they are fond of excitement; they often beg to sit up late at night; they become quickly interested in yellow-

back literature and a hundred other things; shall they be given all these because, forsooth, they are interesting.

So, to sum up this part of our subject we would see that clear impressions need well understood bodily tools, toys which contain a few simple fundamentals of form and color and games and plays which not only test the skill of the body but, at the same time, bring to the child's consciousness the fundamental activities and relationships of life.

CHICAGO KINDERGARTEN COLLEGE.

[Concluded in October.]

SOCIAL RELATIONS.

By GEORGE BICKNELL.

"THE Social Problem is, first and foremost, the problem of knowing society both actively and potentially. What to do about improving society at any particular point, depends upon assumed knowledge about the facts of social structure and social forces. To a certain extent we have such knowledge. We want and need more. To get it is the most difficult task that science has yet proposed. It involves organization and adaptation of all extant knowledge about people, and of all known methods of getting more knowledge. The social problem is not an abstract problem. *It is the problem of thinking the whole human reality as a whole.* It demands such correlations of all special inquiries into human facts that each will complete and be completed by the rest."



YOUNG WOMEN'S DINING ROOM.

He who seeks to better society should be

one who has studied deeply into people and things. In social betterment as in theology, men are rushing narrowly into their work. Men study but one single phase of life and then feel that they are able to take up the standard and lead men on to the long-sought goal, social perfection. There are two classes to-day in our American social fabric. One seemingly arrayed against the other; one grasping and scheming to enslave the other, the other feeling that its highest duty lies in fighting the one. Education must come with its refining force, with its elevating power and must teach these classes so arrayed the great lesson of the brotherhood of man. Education must lay its hand on the brow of the one and point to the heart of the other, saying, "Be true, be just, and this gulf which lieth between shall be narrowed."

Education must implant the spirit of the words of William Ellery Channing into the hearts of all men, "To live content with small means; to seek elegance rather than luxury, and refinement rather than fashion; to be worthy, not respectable, and wealthy, not rich; to listen to stars and birds, babes and sages with open heart; to study hard; to think quietly; await occasions; hurry, never; in a word, to let the spiritual, unbidden and unconscious, grow up through the common."

One of the greatest questions before the American people to-day is the question of the proper distribution of wealth. Many have solved and solved ably, the question of the accumulation of wealth; yet few have undertaken the weightier question of the distribution of wealth.



A KINDERGARTEN ON THE LAWN.

The accumulation of wealth is not necessarily an evil, but if accumulation stop at accumulation, then it becomes an evil. When the Goulds, the Vanderbilts, the Morgans, the Rockefellers and the Rothschilds concern themselves for generations upon generations, alone with questions of accumulation, never entering into the spirit of the truth of why this wealth was given them, for intelligent distribution, then the accumulation of wealth does become an evil, and an evil of the worst sort.

If these men with their wealth and great-

ness—for they are truly great men—would take their daily inflow of wealth and use it in every way possible for the betterment of those in their employ, what a grand chorus of praise would be sounded in honor of their names. I wish in this article to speak of two men, who, as I think after a study of their methods, are doing more toward the settlement of this vexing social question, the array of capital against labor, than anyone else now living.



THE YOUNG WOMEN'S REST ROOM.

These men are not only wise in their method of accumulation, but also in their method of distribution, and so truly wise. They are not only seeking to better their own conditions, but the condition of every employe under them. And whatever I may say or attempt to say in praise of these men, the Messrs. Patterson of the National Cash Register Company of Dayton, Ohio, will fall far short of the praise which they truly deserve. I will seek to present their method, not from a personal acquaintance with the gentlemen, but from a sociological study of their work. Within the last fifteen years in Dayton, Ohio, has sprung up one of the most widely known factories in the world. This factory is known for its treatment of employes and for the article manufactured, —the National Cash Register, one of the most highly perfected devices in the world. Not with the register itself, but more especially with the treatment of employes, will this article deal.

The method of carrying on the business of this factory is not founded on humanitarian principles as such, but everything is considered from a strictly paying business standpoint. Nothing is done unless "It Pays." The methods as employed to-day are not the product of one mind, but are the results of the thought and experiences of many minds and many years. One of the most striking features, and one which has done more for the present perfection of the system than any other, is the "Suggestion System." This was brought about four years ago in the following manner: President Patterson was talking to one of his employes who remarked, "I used to weigh coal for you in Jackson county, but am now cleaning castings in the back of your foundry." "Why are you doing that?" said the president. "Because I cannot get anything better to do." "Make some good suggestion and do something to help out and your merit will soon be rewarded by promotion." "If I should do that you would never hear of it; it would be smothered long before it got to you and I would get no credit for it." "And," says the president, "that opened my eyes; for three months I labored over that problem. I thought what a great opportunity it was; how rapidly the company would progress if we had twelve hundred brains working for us, correcting wrongs and helping us in what was right, and from that came our "Suggestion System," which has, more than any other cause, pushed this company forward. Good suggestions are inventions, because they are something new." From the time of this incident, President Patterson went to work in earnest to obtain the best cooperation of the employes possible, and

to do this, he felt that he must deal with them in the best way possible. What did they want? How could he help them to better their condition?

The factory was dingy. The grounds and surrounding lots were uninviting. The homes of employes were sometimes not as clean as might be. Their children were running about unemployed. The employes in the factory were dominated by the usual "boss" or "superintendent." Quarrels were frequent. Strikes were not an unusual occurrence. Defective machines were returned when sent out. Carousing and discord in the homes of the employes made conditions more unpleasant. Many evils existed which might in some manner be righted. How was this to be brought about?

The "superintendent" and "work bosses" were done away with. The management of the business was put into the hands of committees; these committees differing in importance and power, the highest being the executive committee, consisting of eight officers, and the president and vice-president—the Messrs. Patterson, owners of the business. This committee oversees the whole of the business, having general oversight of the three general divisions: the "office division," the "selling division" and the "making division."

The factory is under the control of the factory committee of five. One member of this committee acts as its chairman each month, in regular rotation. The committees meet once each day, and oftener when necessary, for general consultation; a majority can always act. Each of these committeemen has special duties, connected in the main with designing of tools or control of experimental departments. In addition each machine has a special committee, at the head of which is one of the five factory committees. The office division, including some twenty-three departments, is under the control of a larger committee, some sixteen in number. The selling division, not amenable to such control, is under the supervision of office managers and traveling auditors. Under such a system "instead of strikes we have conferences."



A GROUP OF FACTORY PRIZE WINNERS.

Throughout the factory are placed facilities inviting "suggestions and complaints." The "complaint" or "suggestion" of the office boy is as much considered as that of the highest official. Prizes are given every six months for the best fifty suggestions; these prizes amount to $1,200 annually. Many other prizes for different features are given.

The president believing "that to accomplish the greatest amount of work possible, our men must be healthy," has inaugurated some features heretofore unheard of in the industrial world, and he proudly says, "Not alone for philanthropy, but because 'It Pays.'"

There is a bathroom where each employe is expected to bathe at least once a week, this, on the company's time, and as often in addition as he or she desires. For this the company furnishes in its buildings, bathrooms and an attendant in charge. Calisthenic exercises are given the office employes in the middle of each forenoon and afternoon.

The female employes formerly furnished their noon luncheon, which they ate cold. Now free luncheon is furnished them by the company and is served in a neatly furnished dining-room situated in the fourth floor of the administration building. Here over 200 female employes are accomodated.

The luncheon consists of some nutritious food, often meats, soups, tea or coffee and other articles. This is cooked in an adjoining "model kitchen," which is under the direction of a Pratt Institute graduate. Lessons in cooking are given the employes at the company's expense. If you ask how this pays you will receive the answer "We find the average cost of these lunches to be three cents each, and that by reason ot them each woman does one-twentieth more work a day. This amounts to five cents apiece, making the gain of 66⅔ per cent. We noticed an instant improvement in the general health of the women; there was less delay from sickness, fewer absences, and an ability to work harder and more enthusiastically than when they ate cold food."

There is a "women's bathroom" as well as a "men's." There is a "rest room" for women where they are allowed to retire to rest when feeling indisposed or tired. Each Saturday afternoon is given as a half holiday for all women; also one day, to be chosen by her, in each month, at the company's expense. The women come on fifteen minutes later in the morning and get off fifteen minutes earlier in the afternoon than the men, working 7½ hours a day and drawing ten hours' pay.

Owing to the limited space of this article, I must be content by simply naming some of the other facilities furnished the employes for their convenience and advancement.

There is a reading room and a circulating library containing the best of books, a hall in the center of the city where lectures and entertainments are given for the benefit of the employes, a theater at the factory, where the advance club, the women's century club and other clubs meet.

A new department has lately been organized called the advance department. This department takes charge of Sunday school, school for girls, dancing school, boys' club, young people's club, women's guild of South Park, boys' gardens, national penny bank, South Park girls' literary club, South Park teachers' association, military brigade, advance club, women's century club, school for mechanics, progress club, autoharp club, girls' gymnasium class, boys' gymnasium, relief association, officers' club, band and orchestra, national bicycle club, cooking school and sewing school for young women, cooking and housekeeping classes, janitors' glee club, the out door art association, etc.

The blessings of this company are not held selfishly by the company, but the educational features are for the public as well as for the employes. Night schools are held in which any one may take part. There is a Sunday school which is non-sectarian.

[Concluded in October.]

HOW TO USE THE NEW GEOGRAPHIES.—II.

By CHARLES R. DRYER.

THERE are two "main-traveled roads" through the subject of geography and the doctors are not agreed as to which is the better for youthful steps to follow. Both make use of the same starting point, the home. One proceeds radially outward in ever-widening circles to the township, county, state, country, continent, world. It is synthetic, and leads the child to construct the world in his mind piece by piece, as he builds a playhouse out of blocks. It

is mechanical, and based upon space relations only, as if the importance of knowing a thing and the facility for learning it vary inversely as the square of the distance. Its chief merit lies in the fact that it is apt to induce an unusually thorough study of the home, the value of which can hardly be overestimated; but it leaves the student without an organic scheme by which he can see the multitudinous relations of geographical facts to each other and to the whole earth.

The other road also begins at the home, and uses it to supply the child with certain necessary concepts which must be learned by first-hand observation and experience before the journey can proceed into the unexplored. For this purpose the *home* includes only the area of direct observation, and differs for every child. For one it may be no more than the neighborhood; for another it may extend to Maine, Florida or California. Whatever the area of the home territory it is used like the outfitting station of the arctic explorer from which to lay in a stock of all sorts of implements and supplies, which are absolutely necessary for the voyage, and cannot be obtained after the anchor is weighed and the home port is below the rim of the horizon. To drop the figure of speech, the child is lead directly from the home, or field of direct observation, to a view of the earth as a whole. Any concept which the human mind can form of the world as a whole must be vague and imperfect; superlatively so the concept of the child: yet having that inadequate and even ridiculous image of a great round ball, he has a unit which he can proceed to study in detail and to which he can relate the various parts. He can proceed upon the scientific process of taking the world to pieces and putting it together again, as he does his toy wagon. Thus, every child by the double process of analysis and synthesis creates a world of his own more or less different from anybody's else world.

Frye's Geography uses the latter method. The home geography of the Introductory book has been discussed in a previous article. Pages twenty to fifty-four aim to give a very general idea of the earth as a ball of rock and water, including only its largest features. If a pupil should do this work thoroughly, drop out of school, and never return to study, he would find himself equipped with a far from despicable knowledge of geography. If he should stay long enough to go on through the chapter on people the value of his geographical education would possibly be doubled. Then follow four pages on the air and climate, and six pages on plants and animals. This completes an elementary view of the earth in all its parts, and of geography in all its phases. The remainder of the book comprises a more detailed study of the United States and of foreign countries in their "political" or human aspects. Thus, in the Introductory book, the whole earth is brought twice into view; the second time with the addition of new details and relations. The advanced book repeats practically the same course—the earth as a whole or general geography, the grand divisions as physical units, men, plants, animals, commerce, the United States in detail, foreign countries. The two books present four courses in geography, each complete in the sense of comprising the whole earth, but each treating the subject on broader lines than the preceding, the whole forming a cumulative series.

The distinction between general geography and special or regional geography is necessarily observed in all text-books, but bears too little emphasis in the minds of American teachers. Pages one to thirty, and fifty-five to eighty-five of Frye's Introductory book, and pages nine to twenty-three, and ninety-nine to one hundred twenty-two of the Advanced book are devoted to general geography because they deal with phenomena which occur generally, in all or many parts of the earth. The remainder is regional geography, because it describes special regions in all their aspects. When based upon a sufficient foundation of realistic home work (anything worth while *must* be based upon that) general geography becomes entitled to the first place in order and importance.

The student who understands clearly the general types of relief forms, the general distribution of temperature, winds and rainfall, the general distribution of plants and animals, the general laws of population and trade, and the general relation of all these things to each other, will find little difficulty in learning or even predicting the conditions in any given region. His study of the various regions with their varied combinations of relief, climate and products will prove to be only the application of familiar general principles to particular instances, and the numerous special cases serve to impress and fix the general law.

One special feature which characterizes Frye's books and distinguishes them from all others of their class is the prominent position and large space given to physical geography. In the Introductory book there is no notice or discussion of political divisions until page eighty-nine, and in the Advanced book (except two maps) until page one hundred twenty-three. In the former about one-half the space is given to the geogra-

phy of man, in the latter a little more than one-third. This is regarded by some as a serious fault, by others, (among whom the writer classes himself,) as their strongest point of superiority. Without stopping now to discuss what is best, it behooves the teachers of Indiana to make the most of the good things which the gods have provided, and among them there are few things better than the "clear, correct, concise, complete" compend of physical geography given in the first one hundred pages of Frye's *Advanced Geography*.

If I were called upon to say what the Indiana teacher ought to do first in preparation for using the new geographies, I should respond very promptly and emphatically, Let him master the contents of both books. *There is no substitute for knowledge* and the idea that there is or can be such a substitute is one of the most pernicious delusions in pedagogy. At the outset psychology and method are not comparable in value with a knowledge of the subject to be taught, because they are practically worthless without knowledge. It is the soil out of which good teachers grow. To expect a teacher to develop without it is like expecting a cornstalk to grow on air and sunshine alone, without root connections in the ground.

Students and teachers sometimes have the unaccountable habit of reading or studying a book in little separate bits, without looking ahead to see what is coming next, to say nothing of looking the book all through to get a general idea of its plan and contents. Children may be excusable for this habit of performing just the task set and no more, but hardly teachers. If this article upon the general characteristics of the new geographies serves to incite and assist teachers to *read both books through carefully* at their first opportunity, the good work will be going on rapidly, and the teachers will be ready to make use of the discussions of special topics which are to follow in future numbers of THE INLAND EDUCATOR.

HISTORY IN THE GRADES.

By E. W. KEMP.

THE OPENING OF THE WORK THIS FALL.

FOR the past three years the state of Indiana has been introducing throughout all the common and graded schools a new history course. The aim of this course is to secure a systematic and organic line of history work throughout all of the eight lower grades.

Ex-Superintendent Geeting placed the course before the teachers three years ago. State Superintendent Jones has adopted it, is a strong supporter of it, and will use his authority and influence to have it extended as nearly as possible to every school in the state.

What is this course? In short it is one intended to give to children in the schools some of the important ideas which the human race has been developing throughout its thousands of years of history. By giving children these ideas, and by helping them to see how every important idea now held by man, has had a long process of growth, it is hoped to make our children catch hold of, and feel and live the true spirit of history. Children are to be led to see, for example, how man ages long ago carried all his burdens on his own back, but as he gradually accumulated more to carry, he trained a horse and made it carry his burdens; then he hollowed out a log and thus carried his burdens across a stream, from this to a boat pushed by oars, then to a sail-boat, finally to a steamship, and possibly he may some time move forward to an airship. In religion man first worshiped the sun and other natural objects which seemed to be good and kind to him,—made their crops grow, gave them light, warmed them and the like. Children studying history must be led to see and feel as these early children of the race saw and felt; and then, having made this early historic condition a part of their own thought and feeling, they must be gradually led along the track which man has made in finding out what is in fact the kindest, strongest and best Being in the world. That is to say, children must be led to see that man in his ignorance first worshiped very low things, but that even worshiping these things was better than worshiping nothing at all; that this worship, poor as it was, had in it the germ of a higher worship; so, then, as I say, the pupil must be led to track man as he goes forward step by step hunting and finding a higher and higher object of worship. and coming himself to be more and more like the higher

being which he worships. This same way must the pupil do in tracing out man's school life, his state life, and his social life.

He must trace the school-idea from education given in the most rudimentary way in the family up to the free public school of to-day. He must trace the state from a horde of men wandering about almost without organization of any kind up to the present state. In social life he must trace man from his rude condition of dressing in leaves of trees, furs of animals, and feathers of birds, with as rude habits of manners and morals, up to the cleaner, happier, more beautiful person in dress, amusements, morals and manners of the present time.

Now, what is the object of teaching the child all of this long line of institutional development? One object is to give the pupil valuable information. It enriches and deepens a child's life to know how things used to be a long time ago, how they have come to be what they are now; and then to see the advance of the *now* over the *then*. Such work broadens, deepens and lengthens the child's view; it makes him better balanced, more able to think on more than one side of any question; it makes him more happy because he has more to think about.

A second object in this work is to wake up and train the imagination of the child. The teacher who is skillful will fairly clothe the imagination of the child with eagle's wings as she leads him back to live over again the early life of the boy on the Indus, or on the Tigris-Euphrates, or in Judea, or Greece or Rome or the Middle Ages.

But the ultimate aim in all this work is to help the child to see the place which he occupies in this moving stream of history. By leading the pupil along the historic stream he gets his face turned in the right direction, he sees some of the great works of man which lie along the banks of the stream. He comes to feel that it has cost effort, struggle, patience, courage to build up this great human world which we call history.

When he catches this thought and feeling it makes him desire to take hold and help to make the world of human life—that is, history—richer and better. In short, the chiefest aim in historical work in our schools is to teach pupils how to weave their lives beautifully and well into the business, social, religious, educational and governmental life right around them. If the study of David or Socrates or Cincinnatus, or Charlemagne or Washington or Horace Mann or Lincoln does not make both pupil and teacher wear cleaner shoes and collars, and have cleaner thoughts and ideals, and then diffuse them like sunlight into every phase of life throughout the district in which they are teaching and working, then history work is to little purpose. The ultimate aim of history work is not to *know* something, but to *be* something; that is, to be the best and a little better, in thought and feeling and life than the very best of the human race has been in the entire past. By this means they not only receive the torch of truth from the hand of the past, but they trim it and pass it on with a brighter flame.

Now, a word or two of advice to the teachers who are working out this course in their schools. Some of you are using the *Ten Boys* as a basis for your work. This is very good for a beginning. When you take up one of the stories, say the first one, with the small children, tell the first part of the story in the simplest, purest, plainest language you can use. Then have them tell it to you in their best language. Don't let them simply memorize the story. Lead them, through question and answer, to picture to themselves the ideas and conditions of the people of that early time;—their religious, their educational, their industrial ideas. Compare these with what they see around them in the same line of ideas. Teach pupils to spell the words they use in their history work. Picture out as well as you can for the child the Indus Valley, with its rich soil, and the high mountains to the north. So proceed with other stories in other grades.

One of the greatest mistakes teachers make is going over these stories hurriedly, not stopping to analyze them into their institutional meaning, not stopping to open up the imagination of the children to the picture of the times; not stopping to help children to see how it *had* to be in those early times, and therefore not helping them to see the *roots* of the present time,—the fruit of all these past, deep-set roots.

But the work of the state is improving rapidly. This paper is intended as an encouragement to the thousands of teachers in the state who are doing exceedingly well considering the material they have at present to work with. Simply go on improving and in half a dozen years we shall have worked out an excellent course of history for all the grades, which will lead into the high school and from the high school into the university.

Nothing that child-study can ever do will help in the schoolroom as will love on the part of the teacher, together with intelligence, gentleness, patience, forbearance, kindliness, a winsome tact, aptness to teach, and devotion to the child's best interests.—*Hugo Munsterberg.*

MUSIC.

EDITED BY

J. G. CRABBE, Ashland, Ky.

CHILD SONGS.

Pupils usually gain accuracy in rhythm before accuracy of pitch, if the two are equally well taught. Fine discrimination as to quality of tone comes later than either with the majority, although all these statements have marked exceptions.

Since imitation is the means by which nearly all the first knowledge of the child is acquired, we find his imitative power very great, and if we use it judiciously, excellent results may be secured in the way of ear and voice training. For this reason it has been my plan to make all the song singing, for the first five years in schools, rote singing. Not that no music reading is done in this time; on the contrary, I would have a child begin his music reading the first year of his school-life. While pupils become very proficient in note reading during the first five years, I like the freedom of a rote song. I can train a voice better when the mind is not occupied with the interpretation of symbols. Not that there is no work done in ear or voice training in the music reading classes, but that there it is incidental, while in teaching a rote song it may be the aim of the work. As a song is being taught, pupils may gain a sweet quality of tone, skill in the use of the voice, distinct and correct pronunciation, good habits of breathing and an artistic style of singing. This, of course, requires a teacher well trained in the art of singing. I am telling what is possible in the schoolroom under favorable conditions. When children sing in a stilted, mechanical style, with harsh, discordant voices, some are inclined to say: "That is all that can be expected of public school children," but I assure you there is no singing more beautiful than those same schoolchildren can do if they are properly trained.

The cultivation of a taste for good music only requires that good music shall be constantly heard, constantly sung, and that it be artistically performed. No one enjoys good music badly sung, not even children. I have argued in many places for the interesting of artists in the schools, that the opportunities for hearing the best performers might be often afforded the children. Only so shall we educate our audiences.

I have stated as the last purpose of song singing in childhood *the acquisition of a beautiful medium of expression*. Perhaps I may be counted extravagant of speech when I say that the need of a proper medium of expression has started many a soul on its downward course, but to me it seems a vital truth. The emotions demand expression, no life is complete with material and intellectual food alone; we all recognize higher ambitions, and seeking satisfaction for this higher life often leads to indulgence in the lowest pleasures. Music serves as a beautiful expression for the loftiest emotions of the soul, and when its place in education is rightly understood, its influence must be of the highest value. I know there are those who will cite me musicians whose moral tone is not high, but to me this is no argument against my theory. One-sided development must necessarily result in deformity; my plea is not for music alone, but for music in its place in a fully rounded system of education. We have sports and gymnastics for physical culture; literature, mathematics, and the sciences for intellectual training; why not employ the high arts for æsthetic and ethical culture?—JULIA E. CRANE in the *Musician*.

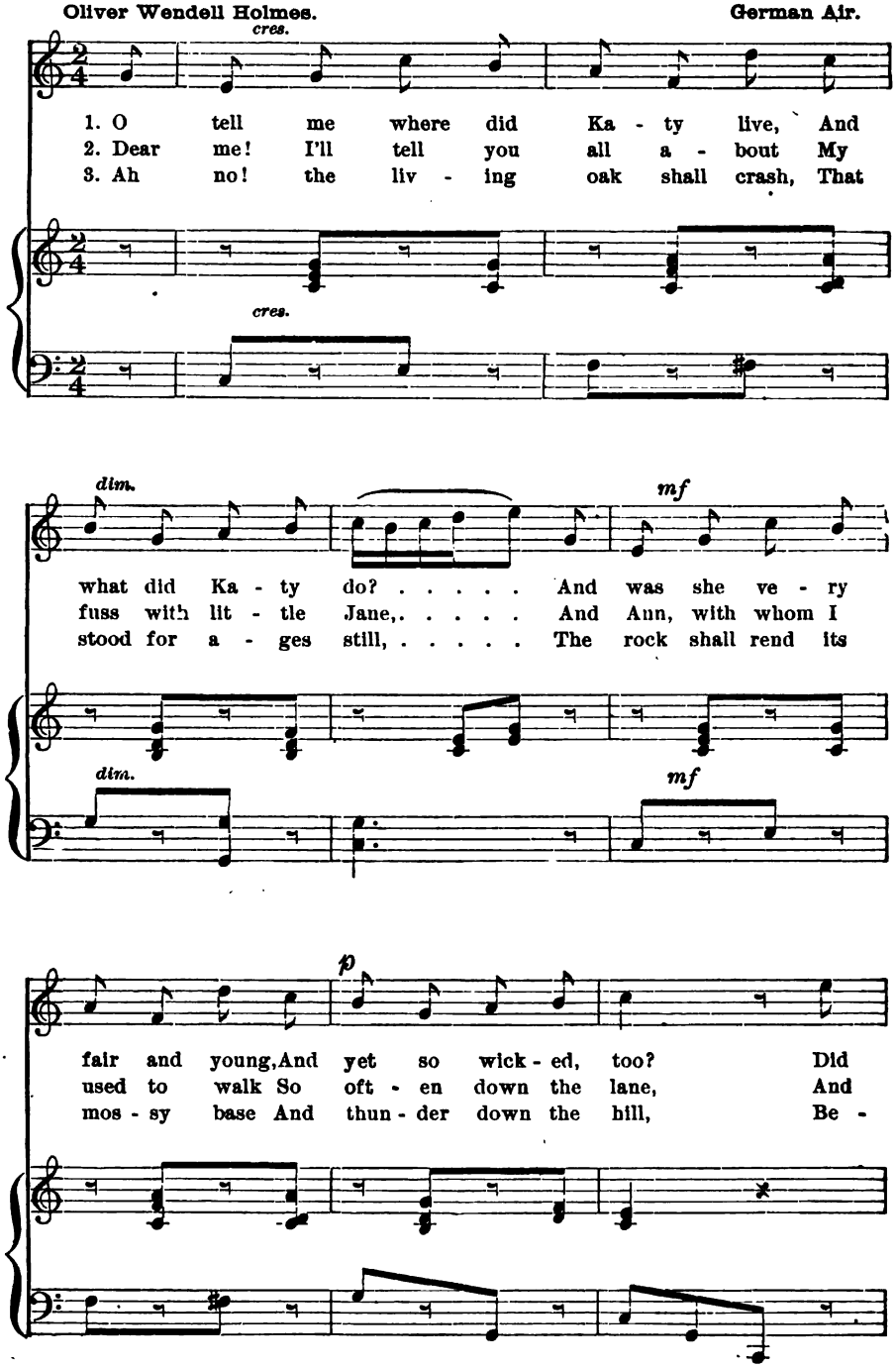
In Germany a child has music as a part of school training. The various schools of sight singing in England spread an interest in choral music. Every child in the United States should have the opportunity of learning to sing and to read from note.—*Ex.*

The child should have much experience in singing before attempting to read music at sight, just as he has experience in language before learning to read. The natural growth of the child is from generality to detail; that is, from experience in concrete forms to a knowledge of the elements which go to make up such forms.

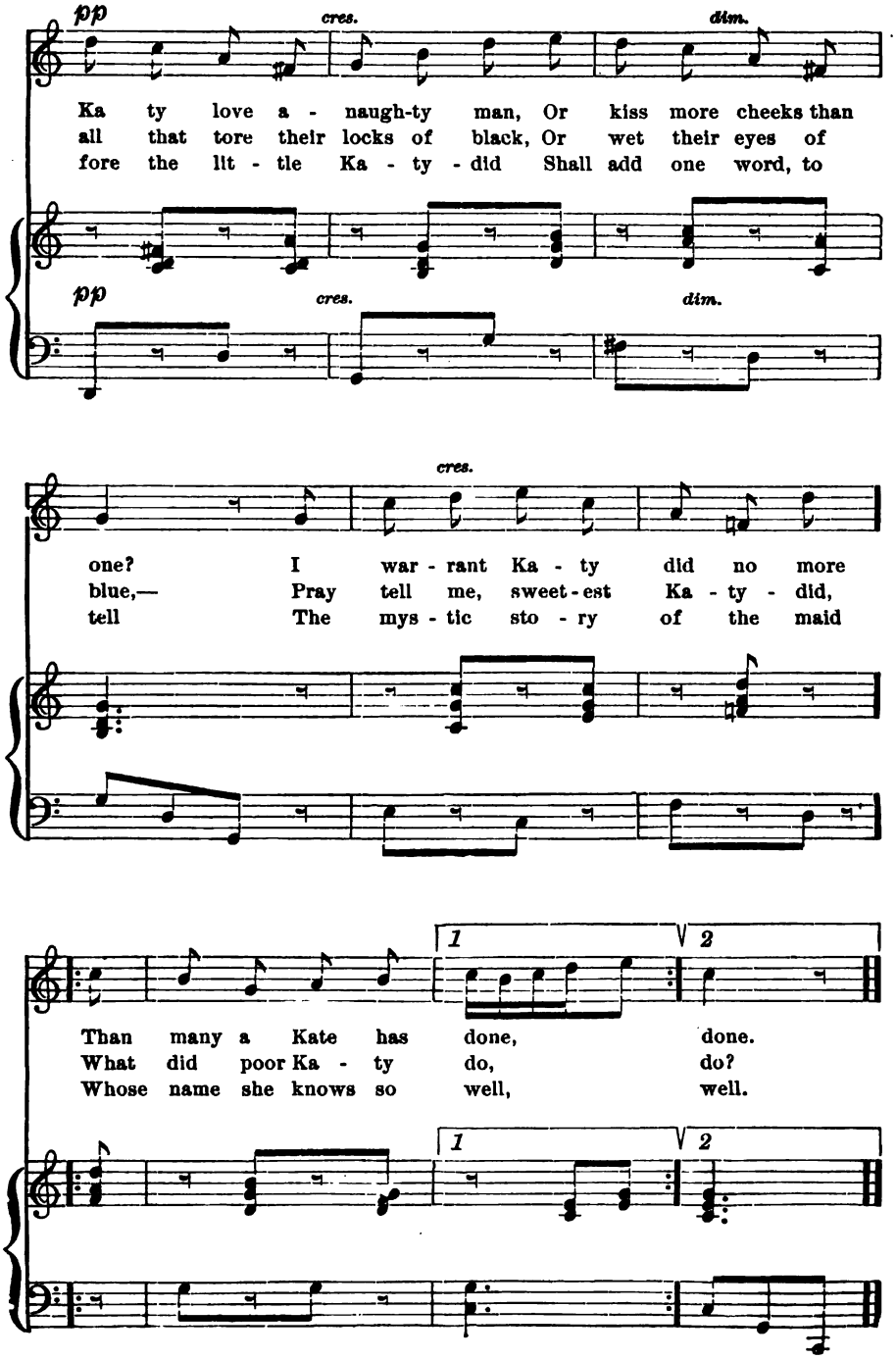
Psychology teaches us that the *experience* of the child should be related to his study. All the modern plans of education are based upon this idea, and, if music is to be taught in the schools by the regular teachers with profit and success, the same educational tests, the same general philosophical principles must be applied to it that are applied to other branches, and the relationship which exists between the child's past experience and future growth must be recognized and established.—*Robert Foresman.*

THE KATYDID.

Oliver Wendell Holmes. German Air.



THE KATYDID.



From *The Riverside Song Book*, by permission of, and arrangement with, the publishers, Houghton, Mifflin & Co.

PRIMARY.

EDITED BY

FLORA J. COOKE, Chicago.

MOTHER CAREY'S STORY.

Once on a time, there were two brothers. One was called Prometheus, because he always looked before him, and boasted that he was wise beforehand. The other was called Epimetheus, because he always looked behind him, and did not boast at all; but said humbly, like the Irishman, that he had sooner prophesy after the event.

Well, Prometheus was a very clever fellow, of course, and invented all sorts of wonderful things. But, unfortunately, when they were set to work, to work was just what they would not do; wherefore very little has come of them, and very little is left of them; and now nobody knows what they were, save a few archaelogical old gentlemen who scratch in queer corners, and find little there save Pitinum Furem, Blaptem Mortisigam, Acarum Horridum, and Tineam Laciniarum.

But Epimetheus was a very slow fellow, certainly, and went among men for a clod, and a muff, and a milksop, and a slowcoach, and a bloke, and a boodle, and so forth. And very little he did, for many years; but what he did, he never had to do over again.

And what happened at last? There came to the two brothers the most beautiful creature that ever was seen, Pandora by name; which means, All the gifts of the Gods. But because she had a strange box in her hand, this fanciful, forecasting, suspicious, prudential, theoretical, deductive, prophesying Prometheus, who was always settling what was going to happen, would have nothing to do with pretty Pandora and her box.

But Epimetheus took her and it, as he took everything that came; and married her for better for worse, as every man ought, when he has even the chance of a good wife. And they opened the box between them, of course, to see what was inside; for, else, of what possible use could it have been to them?

And out flew all the ills which flesh is heir to; all the children of the four great bogies, Self-will, Ignorance, Fear, and Dirt—for instance:

Measles,	Famines,
Monks,	Quacks,
Scarlatina,	Unpaid bills,
Idols,	Tight stays,
Whooping-coughs,	Potatoes,
Wars,	Despots,
Peacemongers,	Demagogues,

and, worst of all, Naughty Boys and Girls. But one thing remained at the bottom of the box, and that was, Hope.

So Epimetheus got a great deal of trouble, as most men do in this world; but he got the three best things in the world into the bargain—a good wife, and experience, and hope; while Prometheus had just as much trouble, and a great deal more (as you will hear) of his own making; with nothing besides, save fancies spun out of his own brain, as a spider spins her web out of her stomach.

And Prometheus kept on looking before him so far ahead, that as he was running about with a box of lucifers (which were the only useful things he ever invented, and do as much harm as good), he trod on his own nose, and tumbled down (as most deductive philosophers do), whereby he set the Thames on fire; and they have hardly put it out again yet. So he had to be chained to the top of a mountain, with a vulture by him to give him a peck whenever he stirred, lest he should turn the whole world upside down with his prophecies and his theories.

But stupid old Epimetheus went working and grubbing on, with the help of his wife Pandora, always looking behind him to see what had happened, till he really learned to know now and then what would happen next; and understood so well which side his bread was buttered, and which way the cat jumped, that he began to make things which would work, and go on working, too; to till and drain the ground, and to make looms, and ships, and railroads, and steam plows, and electric telegraphs, and all the things which you see in the Great Exhibition; and to foretell famine, and bad weather, and the price of stock, and (what is hardest of all) the next vagary of the great idol Whirligig, which some call Public Opinion; till at last he grew as rich as a Jew, and as fat as a farmer, and people thought twice before they meddled with him, but only once before they asked him to help them; for, because he earned his money well he could afford to spend it well, likewise. And his children are the men of science who get lasting work done in the world; but the children of Prometheus are the fanatics, and the theorists, and the bigots, and the bores, and the noisy windy people, who go telling silly folk what will happen, instead of looking to see what has happened already.—*The Water Babies.*

PLAY.[1]

Play, to be truly educative, must have a double meaning. To the parent and the teacher it must mean the direction of the child's thought along the line of his activities. To the child it must mean action without special hindrance, opportunity to work out his own ideas. As "the organizations of developed society are exemplified in the plays of childhood," it lies with the citizens, the mothers, the fathers, and all friends of education to provide right circumstances for joyous, loving, social activity.

* * * * *

"The most important function of play," says an authority, "is to educate the individual for his life-work in a network of social relationships." It can not be denied that the ideal home, the home in which are found the playroom, the attic, the sand-pile, the workshop, household and barnyard pets, educational games, suitable pictures, books, papers, and magazines, furnishes excellent opportunities for gaining experience and establishing ideals; but even this ideal home fails to satisfy the well-born, healthy, normal child. The grown-up atmosphere does not meet his social requirements, and if he is to play rightly, he must mingle with his equals, little people who can sympathize with him and have a keen appreciation of his pleasures, pains, and friendship.

The kindergarten or school to which he is sent should, as certain educators have said, "be a complete community and embryonic democracy, where the child is enabled to take lessons in love and self-respect, in duty and in privilege in humility and self-esteem, in subordination, coordination and independence."

* * * * *

To train the imagination so as to bring about the best results, the teacher must deal largely with the emotional nature. But she can not educate the emotions without dealing with the whole mind, and in doing this there is danger that she may lose sight of the end and aim, or the fact that the crowning feature of her work is to establish ideals. Continued work in the training of teachers shows us where the danger lies. There is too much instruction, too much interference with the ideals of children. The over-enthusiastic kindergartner or teacher attempts to do too much for the child, and she frequently forces him to see through grown-up spectacles. She does not enter into his life, but leads him rather to enter into hers. She seems to regard questioning as her business, and she does not stimulate him to do his part in the work of education. If the teacher would supply conditions, and not assist the child too much, but rather help him to help himself, she would pave the way for him to gain experience and realize his ideals. Over-questioning, helping children until they become helpless, and giving them a surfeit of play or work, have retarded educational progress in the past.

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Color play is important for gaining experience and developing ideals. Nature affords, perhaps, the best opportunity for thought getting. Animals, birds, insects, flowers, the rainbow—all bring color to the child. His ideals may be carried out analytically in folding, cutting, weaving, etc., and synthetically with crayon, pastel, pencil and brush. The child passes easily and naturally through the daubing and experimental stages—both often painfully grotesque to the teacher—into the beautiful realm of artistic delight. His keen sense of enjoyment, and his desire to represent what he sees, hears and feels, are gratified or turned to practical account in color play.

Drawing, another method of expressing the child's ideas, is an excellent means of gaining experience and realizing ideals. Conceptional drawing is play to any child, and this kind of play should receive proper encouragement from parents and teachers. It leads to true object drawing and is a means of bringing out and intensifying ideals.

Storyland is another birthplace of ideals. Here abide truth, beauty and goodness in a form awaiting materialization. Purely imaginative, realistic, scientific, and historical stories, told and retold in concise English, with appropriate gestures, give many ideas which the child can make real through doing, and go far toward establishing a pure literary taste.

The primary teacher wisely continues the drawing and story-telling of the kindergarten. We have in mind the nature work of a primary school where the conditions are such that in the springtime the second-year pupils have an opportunity to study the life history of the narcissus, hyacinth and other bulbous plants. With each plant is connected a beautiful story, an old-time myth fraught with ideas which the child can realize in sand, cardboard, paper, water-color, drawing, and in social games.

ALLIE M. FELKER.

CALIFORNIA STATE NORMAL.

[1] From a paper read before the National Educational Association.

MATHEMATICS.

EDITED BY

ROBERT J. ALEY, Ph. D., Bloomington, Indiana.

HISTORY OF ARITHMETIC.

XIV.—EARLY WRITERS ON ARITHMETIC.

The oldest known work on arithmetic is a mathematical handbook included in the Rhind collection of the British museum. This papyrus was translated by Eisenlohr in 1877. The writer was Ahmes, an Egyptian, who lived sometime between 1700 and 2000 B. C. The title of the book is, *Directions for Obtaining the Knowledge of All Dark Things*. The book bears evidence of being founded upon a much earlier work, so that it probably takes us back to as early a period as 3000 B. C. We would expect a more extensive knowledge of arithmetic than is found in Ahmes's book. The Egyptians seem to have known nothing of theoretical results. No theorems are given, and but few rules. Several problems of the same character are solved, and from these the reader is supposed to infer the method of procedure. Ahmes's treatment of fractions has already been referred to. Only unit fractions were used, and a very interesting table of them was given. Many of the problems are curious and some of them are quite difficult. We will quote but one. "Divide 100 loaves among 5 persons; $\frac{1}{7}$ of what the first three get is what the last two get. What is the difference?"

The Greeks were great cultivators of mathematics. They early studied and wrote upon the science of arithmetic. They distinguished between the science of numbers and the art of computation. The former they called *arithmetica* and the latter *logistica*. The Greeks were greatly hampered in their arithmetical work by the lack of a suitable notation. It is a matter of surprise that they were not the inventors of our present notation. Some writer in commenting on this has said: "The ingenuity and varied resources of the Greeks were the main causes which diverted them from discovering our simple denary system. Their exuberant fancy led them beyond the denary scale; the feeble genius of the Hindoos might just reach it without mounting into an excursive flight."

Pythagoras, about 600 B. C., gave much thought to the peculiar and mysterious properties of numbers. He regarded numbers as of divine origin, and divided them into classes to each of which were assigned definite properties. He started the notion of the mystical properties of numbers, an idea from which we are not yet entirely free.

Euclid treats of arithmetic in the seventh, eighth, ninth and 10th books of his "Elements." Proportion, prime and composite numbers are the main subjects treated. These books are usually omitted from editions of Euclid. Euclid was a great teacher. He probably included in his "Elements" the cream of all Greek arithmetic of his time.

Archimedes is better known by his contributions to geometry, but he added some to arithmetic. He extended the Greek numeration. In his day numbers could only be expressed up to 10^8. By taking 10^8 as a unit of the second order, 10^{16} as a unit of the third order, and so on, he showed how the very sands of the sea could be numbered. He found, by assuming 10,000 grains of sand to fill the space of a poppy seed, a number which would exceed the number of grains of sand in a sphere whose radius extends from the earth to the fixed stars.

Eratosthenes, about 200 B. C., invented a method of determining prime numbers. He wrote the numbers from 1 to whatever number he desired upon a parchment. Then beginning with 4 he punched out every second number, next beginning with 6, he punched out every third number, then beginning with 10, every fifth number, with 14 every seventh number, and so on. The unpunched numbers were the primes. From the appearance of the parchment after the process, the method is known as Eratosthenes' sieve.

Nichomachus, about the beginning of the Christian era, wrote a very important book upon the peculiar properties of numbers.

Bœthius, a Roman writer of the early part of the sixth century, made the work of Nichomachus the basis of his book on arithmetic. His arithmetic was the classical work of the Middle Ages, and was the model of nearly all writers down to the fifteenth century. The work was wholly theoretical, giving no rules whatever of calculation.

Perhaps the oldest arithmetic using the Arabic notation is that by an Arabian physician, Avicenna, of Bokhara. The book was written about 1000 A. D., and was found in manuscript in the

Cairo library. It contains rules for the fundamental operations, and considers quite fully many curious properties of numbers.

GRAHAM'S ARITHMETIC.

This book is omitted from Greenwood & Martin's *American Text-Books on Arithmetic*, recently published by the bureau of education. It is such an interesting book that it is believed a short description will not be devoid of interest. The title-page reads: "The Farmers' and Mechanics' Assistant and Companion; or, a New System of Decimal Arithmetic. Adapted for the easy and regular instruction of the youth in the United States. Compiled by John Graham, Eaton; Printed by Samuel Tizzard. 1824."

The author in his preface pays a glowing tribute to the value of arithmetic. After a number of strong statements he says, "In fact, no bounds can be set to its utility or extent. Arithmetic must therefore flourish and be cultivated as long as time shall remain; or till mankind sink back into such a state of ignorance that the bare supposition of the degeneracy would dishonor human nature." The book is, of course, written to fill a long felt want. In describing the plan of the book, he says, "I have endeavored, for the encouragement of the learner, to do all that I possibly could; the rules are all very plain and easy to be understood; to which I would advise every schollar particularly to attend; for I, myself, have observed,

"Study the rule, your question pry,
You'll gain the answer by and by."

His final word is in verse:

"This little book, peruse it well; I hope in it you'll find
Some entertaining, useful work, to cultivate the mind;
From it you may, if well applied, some information gain;
Arithmetical rules you'll find, both easy, short and plain.
My best advice to youth I give, improve your golden span;
Seek for knowledge while you're young—education makes the man."

The book itself consists of definitions, rules, sample solutions and problems. As is usual in books of the early part of the century, Federal money receives full treatment immediately following the fundamental rules. Decimal fractions is the next subject treated. It precedes by more than one hundred pages, vulgar or common fractions. The question may very properly be raised, whether the more modern arrangement is an improvement. After giving a complete treatment of denominate numbers, the author takes up very carefully the *single* and *double rule of three*, both direct and inverse. These subjects which we now know as simple and compound proportion, were regarded by the older mathematicians as of the utmost importance. Practice, tare and tret, interest, vulgar fractions, barter, loss and gain, equation of payments, square and cube root, fellowship, position, the progressions and annuities follow each other in regular order. *Position* as a subject in arithmetic has disappeared. "In single position, by using one supposed number, and working with it as the true one, we find the number sought by the following rule:

As the result of the position
Is to the position;
So is the given number
To the number required."

In double position two suppositions are made and the result of each determined, then "multiply the two positions by their alternate errors, and if the errors are alike, that is, both excesses or both defects, divide the difference of the products by the difference of the errors; but if the errors are not alike, divide the sum of the products by the sum of the errors, and the quotient will be the number sought." These two rules enable one to solve, by arithmetic, algebraic problems of one and two unknown quantities.

Graham's book contains numerous problems many of which are quite difficult. They are frequently quaint in statement and are sometimes put in verse.

The following problem, reproduced from page 210, is certainly worth preserving:



"Dear friend, I request you with caution and care,
To measure this lion, exact to a hair.
His head is twelve inches, from his ears to his nose;
This measure I give you the rest to disclose.
His tail is as long as his head and a half
Of his body, when found, do secure it safe.
His body is the length of his head and his tail;
He's a surly old rogue, yet you can not well fail
To tell his whole length, when his substance you see;
Youv'e the length of his head, as was given to me.
The question required, is separately to tell,
His whole length, his body's length, and the length of his tail."

THE NEW INDIANA ARITHMETICS.—II.

The omission from the elementary book of work for the first and second years makes it nec-

essary for the teacher to work out a definite plan for these two years. The new course of study gives a very careful outline for this work. The teacher, however, must fit this to the conditions in his schoolroom. Most country boys and girls will not need all the work outlined, and surely all the pupils of these two grades can do more than is outlined.

While placing the emphasis upon numbers and their relations below 20, there is no good reason why larger numbers should not be considered. Most children know simple counting far beyond twenty when they enter school. Counting should be continued in school, and should form a large part of the work of the first and second years. It should not take the place of the work outlined in the course of study; but it should be used along with it, not as supplementary work but as work of equal value.

If the child counts by 1's, forward and backward to 100, he has not only gained a knowledge of the number system, but he has learned every addition and subtraction fact by 1's that there is to know. When he counts forward and backward by 2's both in evens and odds (2, 4, 6, 8, 10 &c; 1, 3, 5, 7, 9, 11 &c) he gets a further acquaintance with the number system, and also learns *all* the addition and subtraction facts by 2's. The first year might include the following work in counting:

(1's)	(2's)		(3's)			(4's)			
1	2	1	3	1	2	4	1	2	3
2	4	3	6	4	5	8	5	6	7
3	6	5	9	7	8	12	9	10	11
4	8	7	12	10	11	16	13	14	15
5	10	9	15	13	14	20	17	18	19
6	12	11	18	16	17	24	21	22	23
7	14	13	21	19	20	etc.	etc.	etc.	etc.
8	etc.	etc.	etc.	etc.	etc.				
9									
etc.									

At first this work may be with objects, although it is not absolutely necessary that it should be. The number system thus learned will not at first be wholly understood by the child. Nothing that the child learns is at first wholly understood. He talks long before he understands the philosophy of speech, and he walks years before he knows the physics of centre of gravity and equilibrium. So, in his counting, there will be many things which he does not fully comprehend, but like his speech and ability to walk, he will use it effectively.

Along with the counting in the first grade, the numerical characters should be learned. The counting itself is greatly facilitated by the use of figures. When the child is able to use the number representations in consecutive counting by 1's, he can, by the omission of alternate characters, present to his own eye the results of counting by 2's. If he is furnished with a box of figure cards he can find pleasure and profit in arranging these in the number system by 1's, 2's, 3's, etc. No teacher will have any trouble in arranging many hours of busy and profitable work with the figure cards.

For the second year the same line of work may be continued, counting by 5's, 6's, 7's, 8's and 9's. It is believed that in this way the characteristic properties of the number system will become the permanent possession of the child. The tables of addition and subtration will be known thoroughly. Counting by the elementary numbers, starting at zero, gives all the multiplication table results. The multiplication table by 7 gives 0, 7, 14, 21, 28, etc., which is the result of the simplest counting by 7's. So it is an easy matter to get the multiplication table from counting. In a similar manner the division table comes with equal ease. The counting device given in the July number may prove of value in adding interest and in helping to fix endings.

Helmholtz said that the number system was the basis of all mathematics, and that the only way to know it was through counting. Many scholars and philosophers scarcely less eminent verify his statement.

NOTES.

R. L. Myers & Co., Harrisburg. Pa., have recently issued a little book on mensuration by S. W. Furst. The book is clear in definition and has many illustrations that are helpful in understanding principles. The measurement of solids is all based upon the prismoidal formula. The author states this formula as follows: "Multiply the sum of both end areas and four times the area of section half way between them by one-sixth the altitude." The problems are numerous and very interesting. The book would certainly be a great help to any one teaching advanced work in mensuration.

Beman & Smith present to the public a revised edition of their *New Plane and Solid Geometry*. The first edition was successful. The new edition retains all the distinctive features of the first. The historical notes and the modern notation make the book very interesting. The student who uses the book not only gets geometry, but he gets a liking for mathematics.

TWO GOOD BOOKS FOR TEACHERS.

THE STORY OF THE MIND.*

During the last two years a large amount of very valuable material for teachers has appeared in magazine articles and in book form. The teacher who has kept up with this literature must have had a great source of inspiration in his work. Of course there has been a good deal of trash printed during this period and some valuable time has been wasted in sifting. It is our intention here to call attention to one of the really good books. We commend to all teachers *The Story of the Mind* as told by Professor James Mark Baldwin of Princeton University. It is a big subject dealt with in a way so dignified and at the same time so clear and simple that it must appeal to every student of education. The problems discussed have been developed much more elaborately by the same writer in his larger works, but here he has undertaken to cover the whole subject briefly, to make distinct each phase of the subject and at the same time show its relation to the whole, and he has succeeded. He has succeeded admirably. Professor Baldwin has the most thorough grasp of his subject. He deals with essentials all the time and in a most refreshing common-sense style for these times.

This little book is loaded. It is a stimulus and an inspiration. It defines psychology, distinguishes between human and animal psychology, discusses child psychology, makes clear the distinction between physiological and experimental psychology, gives hypnotism its proper place, treats of some practical problems in educational psychology, shows the relation of the individual mind and society, tells what a genius is, and classifies the literature of the subject. And all this is done so well that the reader, like Oliver Twist, asks for more.

While every chapter is helpful perhaps those on "The Mind of the Child" and "The Training of the Mind" will appeal most to the teacher. In the first of these he makes some very timely observations. He thinks that the popular interest in children has been of very little service to the scientific investigation of childhood; that even to-day, when a greater body of valuable results is being secured, the main danger to the proper study of the child's mind comes from the over-enthusiasm and uninstructed assurance of some of its friends. He says that this is especially true in America, where "child study" has become a fad to be pursued by parents and teachers who know little about the principles of a scientific method, and where influential educators have enlisted so-called "observers" in taking indiscriminate notes on the doings of children with no definite problem in view, and with no criticism of their procedure. He says further that in the mind of the writer the publication made lately of large numbers of replies to "syllabi" are for the most part worthless, because they heap together observations obtained by persons of every degree of competence and incompetence.

Professor Baldwin says that to investigate the child by scientific methods is to bring into psychology a procedure which has revolutionized the natural sciences, and which is destined to revolutionize the moral sciences by making them also in a great measure natural sciences. He says that the new and important question about the mind which is thus recognized is this: *How did it grow?* What light upon its activity and nature can we get from a positive knowledge of its early stages and processes of growth? This at once introduces other questions: How is the growth of the child related to that of the animals?—how, through heredity and social influences, to the growth of the race and of the family and society in which he is brought up? Having asked these questions the author says that all this can be comprehended only in the light of the doctrine of evolution, which has rejuvenated the sciences of life; and that we are now beginning to see a rejuvenation of the sciences of mind from the same point of view.

The writer enumerates some advantages to be derived from the study of young children from this point of view. These are in part as follows:

1. In the first place, the facts of the infant consciousness are very simple; that is, they are the child's sensations or memories simply, not his own observations of them. In the adult mind the disturbing influence of self-observation is a matter of notorious moment. It is impossible for me to report exactly what I feel, for the observation of it by my attention alters its character. My volition, also, is a complex thing, involving my personal pride and self-consciousness. But the child's emotion is as spontaneous as a spring. The effects of it in the mental life come out in action, pure and uninfluenced by calculation and duplicity and adult reserve.

2. The study of children is often the only means of testing the truth of our analyses. If we decide that a certain mental state is due to a union of simpler elements, then we may appeal to the proper period of child life to see the union

* By J. Mark Baldwin in "The Library of useful Stories" series published by D. Appleton Company, New York. Price 40 cents.

taking place. The range of growth is so enormous from the infant to the adult, and the beginnings of the child's mental life are so low in the scale, in the matter of mental endowment, that there is hardly a question of analysis now under debate in psychology which may not be tested by this method. At this point it is that child psychology is more valuable than the study of the mind of animals. The latter never become men, while children do.

3. Again, in the study of the child's mind we have the added advantage of a corresponding simplicity on the bodily side; we are able to take account of the physiological processes at a time when they are relatively simple—that is, before the nervous system has grown to maturity. For example, psychology used to hold that we have a "speech faculty," an inborn mental endowment which is incapable of further analysis; but support for the position is wanting when we turn to the brain of the infant. Not only do we fail to find the series of centers now known to be the "speech zone," but even those of them which we do find have not yet taken up this function, either alone or together. In other words, the primary object of each of the various centers involved is not speech, but some other and simpler function; and speech arises by development from a union of these separate functions.

4. In observing young children, a more direct application of experiment is possible.

After enumerating these advantages and elaborating them more fully than we are able to do here the author also points out the dangers of the abuse of the method:

1. In the first place, we can fix no absolute time in the history of the child at which a certain mental process takes its rise.

2. The possibility of the occurrence of a mental state at a particular time must be distinguished from its necessity. The occurrence of a single clearly observed fact is decisive only against the theory according to which its occurrence under the given conditions may not occur.

3. It follows, however, from the principle of growth itself that the order of development of the main mental functions is constant, and normally free from great variations; consequently, the most fruitful observations of children are those which show that such an act was present before another.

4. While the most direct results are acquired by systematic experiments with a given point in view still general observations carefully recorded by competent persons, are important for the interpretation which a great many such records may afford in the end. Such observations should cover every thing about the child—his movements, cries, impulses, sleep, dreams, personal performances, muscular efforts, attempts at expression, games, favorites, etc.—and should be recorded in a regular day-book at the time of occurrence.

This discussion of the mind of the child and the method of experimentation the author supplements with some very valuable investigations of his own.

The chapter on educational psychology deals with some of the practical problems of the teacher and of the parent. The sensory and motor types of children are discussed and many very helpful suggestions from the abundance of the author's experience are offered for the study and treatment of such cases. The author shows a thorough knowledge of the relative value of different subjects for different types of mind, and his suggestions on these topics are worthy of the close study of the teacher who has to deal with such problems as these daily. Indeed, the live teacher will find much in the book that will be of value to him.

THE THREE LINKS.*

We have just had the pleasure of reading and studying a little book of singular beauty under the above title. The book was written by Professor Howard Sandison of the Indiana State Normal School, and like all of his work is deeply thoughtful and well done. The sub-title of the book is *Three Addresses on The Symbol of Odd Fellowship*. These addresses were delivered on different occasions, but the unity of thought was preserved. We are sure that very few people who are not members of this splendid order understand the significance of the symbol, and we doubt if all who have assumed its mystic vows have grasped the depth of meaning and felt the beauty that Professor Sandison has expressed. We venture to suggest that a study of what the writer has said will stimulate the members of this ancient fraternity to larger life both without and within the mystic circle. But aside from what it may do for the order in teaching the larger meaning of its symbol, we believe Professor Sandison has here made a real contribution to the literature of Friendship, Love, and Truth.

The entire discussion would grace the columns of any magazine, and would prove of value to our readers, but a brief statement of its contents must suffice here.

In his preface the author tells us that it is his

*Published by Scott, Foresman & Co., Chicago.

aim (1) to unify the act of the founders of Odd Fellowship in creating for it a symbol with the general movement of the race in its symbolizing activity; (2) to arouse a higher appreciation of the wisdom, of the insight, of those who gave origin to the order in seizing upon just the symbol that they did—a symbol indicating a unity of spirits linked together by activities of the high order denoted by the words, Friendship, Love, and Truth; (3) to present the claim that each of these is no objective and existing thing merely, but a mode of activity, a process that should belong, in its essential nature, to each member of the order; that each one of these activities, while possessing a something distinctive, is yet in complete unity with the two others; (4) to suggest the thought that any one whose life, whose conduct, is marked by these high modes of activity would belong in the true sense to the order of Odd Fellowship, because such an endowment is rare, indeed.

The author shows first the general idea of symbolism, pointing out the singular and highly efficient force of this kind of language, and illustrating its use by the prominent nations of the earth, past and present.

Next he deals with the three links, pointing out the significance of the number and the unity and leading up to an explanation of the threefold unity by a closer exposition of each of the three elements making the links. Friendship must be shown to have as its essence love and truth. The author shows first that it has love by using some strangely beautiful illustrations, one of which we reproduce: "Eudamidas, the Corinthian, had two friends, and coming to die, being poor, and his friends being rich, made his will after this manner: 'I bequeath to Aretheus the maintenance of my mother to support and provide for her in her old age, and to Charixenus I bequeath the care of arranging my daughter's marriage, and of giving to her as good a portion as he is able. In case either one of these friends chances to die, I hereby transfer to the other this which has been willed to the one whom death has claimed.' This seemed a very peculiar will, but the heirs accepted the legacies with very great content. Five days after the publication of the will, Charixenus died. Aretheus, in harmony with the will, nourished the old woman with great care and tenderness. Assuming the legacy of Charixenus, he devoted the five talents, which constituted his possessions, to his only daughter and to the daughter of Eudamidas. He gave to each one-half as a marriage portion, and solemnized on the same day their nuptials. Montaigne, in commenting on this strange will, remarks that Eudamidas, as a bounty and a favor, bequeaths to his friends a legacy which permits them to employ themselves in his service. Thus Eudamidas by his act illustrates the essence of friendship even more eminently than is done by the act of Aretheus." Friendship is next shown to include truth. The author says that truth is sincerity; that if a man is true to himself he is sincere with himself; that if he is true to another he is sincere with him; that to be really true to another one must be as sincere with him as he is with himself when he is alone; and that he must be as true in the absence as in the presence of another.

Love must be shown to have as its essence friendship and truth. This the author does by showing that love is the most fundamental principle of spirit; that it is the most important word in all scripture and in all art; that it is the word of deepest import in life itself; that justice and all other virtues are subordinate to love and qualities of it. He shows that love is the entire spiritual attitude of the human being, including intellect, feeling and will, truth, beauty and goodness. These points are aptly illustrated in scripture, philosophy and poetry.

Finally it remains for the author to show that truth has as its essence love and friendship. And here he excels himself. The argument is forceful and carries the reader along convincing him thoroughly. Plato's saying, "Truth is the form of God, and light is His shadow," is his point of departure. He shows that the word "form," as used here, meant the permanent aspect of an object; that the form of a thing is its ideal; that it is the underlying activity that reveals itself in the transient phenomenon; that it is the permanent, abiding, self-identical activity, as opposed to the transient and phenomenal—it is that which is eternal in distinction from that which merely seems. This he illustrates: "A plant as a space-occupying existence is not a form, but the energy that reveals itself in the seed, in the transition of the seed into the tiny plant, and in the further changes that occur as the plant matures and produces seed again—that underlying activity which is itself invisible, but which reveals itself in these various stages, is the form. Therefore, when Plato says that 'truth is the form of God,' he asserts that truth is the process of Divine personality." It is, indeed, "an insight of great force and beauty." With this idea of truth the author shows how it differs from mere facts in life. The sayings of Christ are shown to be used in this large sense of truth. He then shows that all manifestations from space to spirit are truth only in so far as

they mirror the process of the Infinite mind. He calls upon language to show the same idea. There is a wealth of illustration at every step that is convincing. Finally Professor Sandison concludes: "The process of a spirit that has 'overcome' is truth, and it can have nothing less than love as its mainspring, and nothing other than friendship as its form."

The little book is a splendid contribution and can be studied with profit by teachers as well as Odd Fellows. F. M. STALKER.

OUR EDUCATIONAL PRINCIPLES.

[The following declaration embodies the resolutions presented and adopted at the Los Angeles meeting of the N. E. A., and may be considered as expressing the best in American education to-day. The recommendations pertaining to political interference, to the relation of school to community, to the raising of professional standards, and to better support of the Bureau of Education should have the endorsement of every teacher in the land.—THE EDITOR.]

The National Educational Association, assembled in thirty-eighth annual convention, and representing in the largest sense the teachers of the United States, makes the following declaration of principles:

We reaffirm our belief that the course of education, despite difficulties, doubts and discouragements, is steadily upward and onward. The year which has passed has been one of genuine progress. Sound educational ideals are more firmly established, the benefits of school and college education are more widely diffused, the work of teaching is more intelligent and successful, the teachers themselves constantly grow more earnest and more studious. The one dark page in the history of the year is that which records interference with the work of public education, and attacks, successful and unsuccessful, made upon it by political tricksters and spoil-seekers. We appeal to the public and to the press to resist, to resent, and to punish these attacks, and we pledge our best efforts to the absolutely non-political and non-sectarian conduct of the work intrusted to us.

We record with gratitude our sense of obligation to those noble men and women who have held out a generous hand to education, north, south, east and west, and who by their gifts and endowments have added so much to the strengthening and upbuilding of the various types of educational institutions, general and special, elementary and higher, throughout the land. The influence of their example is widespread, and the effectiveness of their gifts is incalculable.

We emphasize once more the function of the school as a community center, to draw to itself the children and the parents for gatherings which reflect the life of the people, and which give it inspiration. Particularly, in close association with the library, the school should make itself felt in shaping the thought of the people in ways and by methods which lie outside of the scope of formal instruction.

We support cordially every effort to elevate the profession of teaching, by raising the standards for entrance to it, by promoting educational scholarship, and by providing for stability of tenure and for adequate compensation. We are prepared to accept the complementary principle that inefficient and incompetent teachers must yield to the professional judgment which asks their retirement from the school, and we deplore any and every attempt, organized or otherwise, to protect such teachers in their posts by influence, whether personal or political.

We wish by every legitimate means to support the invaluable work of the Bureau of Education, and we ask that it be given such support by Congress as will enable it to perform, with fullest efficiency, the tasks entrusted to it. We recognize, perhaps more fully than do others, the value of the statistics of education collected in the census of 1890, and we earnestly urge upon the Director of the forthcoming census the desirability of carrying on anew the lines of inquiry then pursued, together with such additions and improvements as experience has shown to be needed.

This Association has long insisted and continues to insist upon the full recognition of all educational agencies as essential undertakings in the public interest, whether they are supported by public taxation or by other means. All alike are and should be in heartiest cooperation, and any attempt to array one institution, or one form of educational effort against another, is little short of treason to the nation's highest interests.

The past year has brought new and grave responsibilities to our common country, and has opened before it new and difficult opportunities. With a courage born of high hope and of confidence in democracy, the nation's schools and schoolmasters will assume their full share of the burden so suddenly imposed upon our citizenship and will contribute by every means in their power to the wise, patriotic and democratic solution of the problems which confront us as a people.

THE TOWNSHIP INSTITUTE.

SECOND MEETING.

NOTE—It should be borne in mind that the outline on Organic Education is based upon Miss Scott's book by that title, published by D. C. Heath & Co., 90 cents, and the outline on Reading upon Professor Clark's *How to Teach Reading*, published by Scott, Foresman & Co., 75 cents.

ORGANIC EDUCATION.

OUTLINE.

1. The study of Chapters II. and III. (First read each chapter as a whole in order to apprehend its dominant thought.)
 a. Chapter II.
 (1) The two striking divergencies of the plan from the German system. (Pages 12-13.)
 (a) Note with especial care the second difference.
 (b) By a definite example showing the mode of organization set forth in this book.
 (2) Fix clearly in the mind just what is included under "nature, institutions, and art," page 14.
 (3) What grounds do you see for the three ways of treating the material? (Page 14.)
 (4) Are you employing them all in your daily work? To what degree can you do so?
 (5) The idea of "the useful," page 15.
 (a) Give an example showing what is meant by "harmonious interaction with the social organism."
 (b) Explain the sentence beginning, "The spontaneous interests," page 16.
 (c) Note the text from "If such definition," etc., to end of chapter. (Pages 16 and 17.)
 b. Chapter III.
 (1) The three conceptions of the nature of the school. (Page 18.)
 (a) The evil results arising from the first, and from the second.
 (b) Study carefully the definitions of the individual and of society, on page 19.
 (2) This book being based on the third conception, i. e., on the idea of social individualism, the curriculum advocated includes all the subjects taught under the first conception, and five in addition. (Page 20.)
 (a) History of civilization.
 (b) Sociology.
 (c) Literature.
 (d) Art.
 (e) Ethics.
 (3) The two objections to this extension of the course. (Page 20.)
 (a) The answer to the first objection. (Pages 20-23.)
 (b) The answer to the second objection. (Pages 23-26).
 (c) Make completely your own the passage on page 26 beginning with "The primary advantage," and ending with "free and responsible."
 (4) The relation of the new curriculum to the degree of scholarship possessed by the teacher. (Pages 27-28.)
 (a) Note carefully the quotation from Professor Kelsey's article. Study the article itself, if practicable.
 (5) The relation of the dominant interests and the material. (Pages 28-30.)
 (a) Study the children in the successive grades in your own school, in order to see if they seem to manifest these dominant interests.
 (b) Observe that the material indicates a rise from the early past to the time of the United States, and then a second consideration of the past, culminating with a special study of the United States form of government.
 (1) The principle underlying this?
 (c) Explain the last paragraph on page 30.

COMMENT.—CHAPTER II.

Remembering that the ultimate aim of the reading circle work is to enable the teachers to deal with the book selected without outline or comment, a few only of the topics will be explained in the commentary.

1. *The Culture Epochs.*—It is evident that the work in *Organic Education* unifies, to a considerable extent, with the idea of "Culture Epochs." Previously, in the study of *General Method*, by Dr. McMurry, and in the study of *The Essentials of Method*, by Dr. DeGarmo, the teachers have given considerable attention to the idea of "Culture Epochs." The notion of "Culture Epochs" assumes that the race in the production of any expression of itself, as language or art, passes through certain stages, and that these stages belong to every nation and to every individual. For example, in art there has been in the progress of the race the stage in which the material itself, as stone, color or sound, is prominent; a second stage in which the idea and material are balanced, as with the Greeks, a third stage in which the spiritual element becomes predominant, as in Christian or romantic art. Also in religion there was at first a stage in which the external, as the sun, clouds, rivers, etc., are regarded as divine; a second, in which the spiritual, itself, as merely subjective, is considered as revealing the nature of God; a third, in which God is viewed as constituting the total round of existence, and hence revealed in all the physical and spirtual.

2. The educational bearing of all this arises mainly from the fact that the child in its progress from birth to the end of life is assumed to pass through substantially the same stages, and that in consequence the material for study is to be obtained from the actions and productions of

the race in the stage of progress corresponding to the given stage in the child's life.

3. It is to be noted that the German plan based on the idea of the "Culture Epochs" assumes that sufficient material for all the different stages in the child's elementary education can be obtained from the life of the Hebrews on the one hand, and the life of the German race on the other. The one furnished the religious strand and the other the political. The plan proposed by Dr. McMurry in his *General Method*, on page ninety-five, discards that phase of German education relating to the religious instruction, and transferred the field of political activity from the German to the Anglo-Saxon. He says: "Neither sacred nor German history can form any important part of an American course of study. Religious instruction has been delegated to the church, and German history touches us indirectly, if at all. The epochs of history from which American schools must draw are chiefly those of the United States and Great Britain. France, Germany, Italy and Greece may furnish some collateral matter, as the story of Tell, of Siegfried, of Alaric, and Ulysses, but the leading epochs must be those of our own national history."

4. The work in *Organic Education* differs from both of these plans in two main respects.

(1) The first of these is as follows: It obtains the material for the education of the child from the development of the race as a whole and not from that of any single nation nor from the development of a few nations. The importance of this in education is evident at once. It gives the pupils in the American schools the advantages of considering the work of the race in its more universal aspect. It confers an enlarged view of life. It removes the provincial element and renders the child more sympathetic as to the interests and progress of all nations.

(2) The second difference relates to the mode of organization. The German mode and that proposed by Dr. McMurry implies several parallel lines of work. The concentration or unity arising is necessarily somewhat external. The plan in *Organic Education* selects a given period in the development of the race, analyzes it into its different aspects as religious, industrial, artistic, etc. It then involves the comparison of this period under these various elements with the present age. In this way the ethical principle underlying the given period is discovered, and all the various elements are reduced to a unity through this principle. The concentration or unity is therefore vital because internal. All aspects of the given period are seen to develop from the same source.

CHAPTER III.

1. This chapter begins with three of the main conceptions that have been held at various times concerning the public-school system.

(1) In the order of time the first one is the institutional conception. This regards the school as an institution, and the other institutions of society as all important, while the individual is thought to be of but slight consideration.

(2) The second is the conception of individualism. It regards the individual as of supreme importance and the institution as somewhat artificial and not strictly essential.

(3) The author regards the present conception, out of which the educational world is just passing, as differing somewhat from both of these. In the present conception, as popularly held, the public-school system is conceived as a thing in itself, as isolated. It is in a vague way understood to prepare for life. But it is not held strictly to any conformity to the interests of the child or of society as a whole. This the author regards as "the ancient conception," meaning by that the conception that has been popularly held during the last fifty or a hundred years.

(4) By reference to the expression of Professor Dewey and Colonel Parker the author calls attention to a conception of the nature of the school system superior to any one of those mentioned. This conception is termed "social individualism." Such a conception regards the child as a member of the school. It does not, however, regard him as merely a member. He is considered as possessing potentially all that the school, all that society as a whole possesses. It is Froebel's conception of the child as a "member-

whole." Whenever the individual is viewed as a "member-whole" he is regarded as being modified by society and in turn as modifying society. Progress in the individual, therefore, implies progress in the social whole. All progress in the social whole involves also a like progress in each member of society.

2. Out of this new conception of the individual arises the apparent enlargement of the course of study, consisting of work in the history of civilization, sociology, ethics, literature and the plastic arts. The objections to this enlargement of the course of study and the author's reply to these objections are worthy of careful attention. Especial study should be given under this heading to the following, pages 26 and 27: "By this means the individual child gains the invaluable habit of pursuing his ideals into the stage of conduct, reflecting upon that conduct, as its consequences return upon him, and thus modifying or reconstructing the old ideal in accordance with the new light. And it does not seem extravagant to say that if only this one habit were deposited from the tide of school life,—as it assuredly may be, under the organization plan—the years of primary education would have been well spent; for it is this alone which renders possible a life at once morally free and morally responsible."

HOWARD SANDISON.

HOW TO TEACH READING IN THE PUBLIC SCHOOLS.

OUTLINE.

I. THE CRITERION OF PITCH. (Page 42.)

a. Read aloud the following sentence in as many different ways as possible and show that it is the motive in each case that causes the change in melody: "Oh! I don't think you will."

b. What determines the key? Illustrate by reading aloud some of the examples on pp. 46 to 49.

c. What is the psychology of the circumflex inflection?

d. Show that we do not always "raise the voice at a comma," nor "drop it at a period."

g. How would you correct a pupil who used a falling inflection on *cat* in the sentence: "I see a cat and a dog?"

II. PRACTICAL EXERCISES.

Test the correctness of the analysis of *Barbara Frietchie*, p. 71, by reading the poem aloud. Also find alternative readings of the different couplets and justify your interpretation.

COMMENT.

A thorough understanding of the psychology of Pitch is probably the most important requirement for the teacher of reading. The melody is a sure indication of the pupil's grasp of the meaning of a given phrase or sentence. But melody is complex and intangible. We cannot analyze it unless we have first a clear conception of the mental action that underlies it, and without the ability to make such analysis we cannot give the criticism necessary to correct errors in melody. We have treated this aspect of the subject at great length in our book and need add nothing in this place except to urge upon the teacher a careful study of Chapter Two, and to promise that such study will more than compensate for the time and labor spent.

It is in judging the reading of descriptive and narrative passages that the teacher has most need of the criterion of Pitch. As a rule the child's imagination is greatly stirred in reading dramatic passages and his melody is definite and decisive. But where the imagination is not so stirred he is likely to drift along, and then his lack of vitality becomes evident in the melody. Incisiveness of inflection and variety of melody can come only when we read every phrase with a definite purpose, and I would therefore impress upon the teacher that he read aloud all the examples in Chapter Two, at the same time giving careful attention to his inflection and melody as they proceed naturally out of the thought and purpose, so that he may develop his ear for melody, and in this way, by the aid of his knowledge of Pitch psychology, direct the proper expression in his pupils.

It is my experience that pupils seldom overdo their inflections. Still there are cases where they do use inflections that are too long. The cause lies generally in the teacher's desire to have the pupil emphatic. As a result he emphasizes nearly every word and does so with great vigor with the result above described. A just appreciation of the purpose of the phrase or sentence *as a whole* will do much to correct the defect.

S. H. CLARK.

HISTORY.

OUTLINE.

1. Discuss the nature of history, showing that it is a change in the life of humanity from a lower to a higher stage of thought and feeling, and consequent acting Give examples; as, growth in religious toleration, in free labor, in better schools, schoolhouses, methods of instruction, etc.

2. Discuss the institutions by which mankind makes his progress in history—church, school, state, business, family. Show that all movement in history comes about by each generation participating in these institutions by giving higher thought and life to them, and hence the *teacher's* work, as a teacher of history, is to make the children whom she teaches full, free, active members of these institutions.

3. Study the early life of the Indus valley as shown in the story of Kablu (*Ten Boys*).
 a. Study the geography.
 b. Study the institutions as above shown in the story.
 c. Study the life of the Persians, Jews and Phœnicians, as shown in the story of Darius.
 d. Compare this second life with the life studied in the the first story and see what *change for the better* has been made. Particularly point out the *wealth* (business advancement) which the people made in the Tigris-Euphrates valley over the advancement made in the Indus valley. Also the advancement made by the Jews in teaching the world the idea of one God, and of the Phœnicians, the great work they did in teaching the race the use of ships.

Good books for use in preparing this lesson: *Ten Boys; Story of Extinct Civilizations*, published by D. Appleton & Co., price 40c; Kemp's *Outline of Method in History*.

NOTE.—For suggestions on this outline read Professor Kemp's article on "History in the Grades" which appears on another page.

ADOLESCENCE.

[The following expressions of Doctor G. Stanley Hall will be of interest as the views of a man who has given the subject of child study in all its phases careful and continued thought.—THE EDITOR.]

The history of civilization and a history of sociology show that sometimes individualism has been accented, over-accented, and then the altruistic, socialistic side has been over-accented. Then the sociological phase has been carried down to limit the free development of childhood, but I think we are now arriving at a more healthful equipose where each great subject shall receive its just due. And the point of union, in my opinion, or at least from a psychological aspect, is to be formed in the development of adolescence. It is but a few years since we began to study this strange phenomenon. We now know it is a period of second birth, physiologically and psychologically. We know that during this transforming epoch from thirteen, fourteen on to seventeen years of age—and, indeed adolescent ferment is not not complete until well on to twenty-six or twenty-eight—there comes the birth of love in the largest Christian sense, psychologically free from all selfish motives. And the development of that is, I believe, the true philosophy, or the true psychology in education. In the history of education, in all countries, everywhere among savages and civilized races, education begins in the consecration, rites and ceremonies, during early adolescence. The crucial importance of that period has always been felt. There is no savage tribe that does not bring the most solemn and consecrating influence of the older to bear upon the younger generation during these critical years. At this period men are vulnerable to all kinds of temptation, and the older generation must at this time give the younger its most consummate care. Civilizations are judged and weighed by nothing so crucial as by the way they have treated adolescence. The Greeks carefully watched the young on entering this period. The Romans developed the natural pugnacity and initiated the youth into the secrets of war, and the Persians appeared to this age with great expectations. So the modern church—this is the time when the Greek church, the Catholic church, the Lutheran church, the Episcopal church, confirm. And it is the time when statistics show that most conversions are had among those denominations that believe in conversions. The reason of it is because it is the time when the soul grows most and grows fastest. It is the time when men's and women's sympathies reverberate the widest. It is the time when the heart pours its rich transforming flood through the body.

Biologically, the period consists simply in this:—Whereas, before, the child has been selfish, and the normal child has, perhaps, inherited physical and mental traits from the father or or mother, or perhaps one or two grandparents, at this critical period the floodgates that connect him with the past are down, and all the seven rudimental organs of the body and more of the soul, are most active. The individual, at this period, is susceptible of culture and development. It is the natural dawn of the educational instinct, the culmination of religious and parental care which alike develops slowly upward toward the university, as civilization advances, and slowly down toward the kindergarten, as civilization advances. This gradual development is best measured, I know, by civilization. Just in proportion as civilization advances, and new ideas come in from all sources, and there is a mixture of bloods, this second in fancy, adolescence, is longed to an uncertain time, and must receive consummate care.

With the mixed blood there are infinite possibilities for manhood and womanhood. These possibilities are infinitely extended, and in this lies the hope of America. There is no country in the world where so many diseases, moral and physical, prey upon the young adolescent as in this country. No country where there are so many forms of mental and physical arrest as here; but there is no stock of blood in any country in the world where, when these dangers are avoided and complete immnnity is attained, manhood and womanhood is so perfect as in this

land. The true education will transform the old selfishness into an ardent self-sacrifice, and you will find that the spirit of altruism will be just as deep and strong with those who have passed the meridian of life as the instinct of selfishness was before.

SOME NOTES ON CHILDREN'S READING.

I.

"There is a Wallachian legend which, like one of the figments of popular fancy, has a moral in it. One Bakála, a good-for-nothing kind of fellow in his way, having had the luck to offer a sacrifice especially well pleasing to God, is taken up into heaven. He finds the Almighty sitting in something like the best room of a Wallachian peasant's cottage—there is always a profound pathos in the homeliness of the popular imagination, forced, like the princess in the fairy tale, to weave its semblance of gold tissue out of straw. On being asked what reward he desires for the good service he has done, Bakála, who had always passionately longed to be the owner of a bagpipe, seeing a half worn-out one lying among some rubbish in a corner of the room, begs eagerly that it may be bestowed upon him. The Lord, with a smile of pity at the meanness of his choice, grants him his boon, and Bakála goes back to earth delighted with his prize. With an infinite possibility within his reach, with the choice of wisdom, of power, of beauty at his tongue's end, he asked according to his kind, and his sordid wish is answered with a gift as sordid."

Nothing affords a better illustration of what takes place in the field of books than the application Lowell makes of the above legend. With all of beauty and value before him he chose according to his kind. Unable to appreciate the untold glory within his reach, it had no attraction to draw him out of himself toward something higher. One need only go to a news stand and watch the process by which many people select their reading matter in order to realize that the race of Bakála is by no means extinct. With the best in content and manner before them they often choose the worst. And this is not because they are naturally depraved, but because the springs of what is higher in their nature have not been touched by contact with one who has felt the elevating power of literature and has been able to infuse some of his own enthusiasm into others.

II.

But it is not enough to give the child the ability and the inclination to read. These are important but they are by no means unmixed evils. Bad literature, bad music, bad art in any form, is likely to insinuate itself into the will and steal away its strength ere one is aware, unless the will is carefully fortified against such attacks. To this end it is of the utmost importance that the reader of books have a taste sufficiently cultivated to enable him to distinguish between good and bad. He must know what is good to read as well as how to read. Books not only introduce one into the society of the immortals; they may also introduce us into and confirm our membership in the society of the lower world. To many a book is—a book. The writings of "The Duchess" or "Ouida" occupy as high a place in their perspective of fiction as those of George Eliot. In selecting books for boys they can not distinguish between the value of what "Old Sleuth" has given to the world and what Horatio Alger and G. A. Henty have given it. Hawthorne and Hall Caine to many minds are on the same level. The dull insipidity of many books which have been written "for boys and girls" contrasts strangely with the vital, tonic effects of works like the Leatherstocking tales of Cooper or the Waverly novels of Scott. Here, then, rests the great responsibility of the teacher who must introduce his pupils to the world of books. He must himself know the best and must leave with his pupils a desire to read the best. The easiest way to do this is by the positive method of putting constantly in the way of the reader those books that will leave him facing upward. It is better to form a correct habit than to attempt to eradicate a bad one after it is firmly fixed. It cannot be too clearly borne in mind that books not only have in them that which tends toward salvation, but that they have in them also that which tends toward damnation. Granting that any reading is better than none we must yet agree with Lowell's humorous way of putting it when he says that "though all deacons are good, yet there's odds in deacons."

III.

And here is a good place to remark that one of the chief obstructions in the way of forming a correct and elevating literary taste is the great flood of trash called "juvenile literature" with which enterprising publishers annually inundate the world. Probably no other class of books is so generally barren and lacking in the first elements of imagination. It is not often that *Jungle Books* are given to the world, although one *Jungle Book* is worth a wilderness of the missha en objects that spring into being to supply

the demand for books for young people. Among the worst of these is the attempt to reduce the great classics to one-syllabled stories for babes, and the morbid, sickly, sentimental stuff with crippled, saintly children as leading characters which are yet found in some of our Sunday school libraries. It is worthy of note that Sunday school libraries are rapidly changing their character now-a-days, since we have begun to realize that the best preparation for life is an early introduction to the works of the great authors who really understood life and had the skill to portray it in its true light. It is a question as to whether the world would not be decidedly the gainer if all the so-called juvenile books, excepting a possible half-dozen, like Lamb's *Tales from Shakespeare*, Hawthorne's *Wonder Books* or Kipling's *Jungle Books*, could be suddenly swept out of existence.

IV.

But what would be left for the children after we have thus ruthlessly disposed of the "juveniles?" There would be the old myths of Greece and Rome and the younger myths of the Northland, there would be the legends and folk-stories of all ages, the rhymes of Mother Goose, inexhaustible in their power to delight. And very young children have profound pleasure in Stevenson, and Field and Riley, not because they have written in words of one syllable but because they have caught the child-spirit. What we should especially protest against is the lack of imaginative interest in what is offered us for children. It is the presence of this interest that makes selections from the *Arabian Nights*, or *Don Quixote* or *The Pilgrim's Progress* so valuable for children. The most powerful book of recent years in this class which appeals to both old and young is *The Cruise of the Cachalot*, by Frank T. Bullen. It is the story of a cruise around the world after sperm whales. It has often been compared to Dana's *Two Years Before the Mast*, but it is much easier to read than the latter, requiring less technical knowledge, and it has completely expressed the "deep-sea mystery," to borrow Mr. Kipling's eulogy. (It may interest teachers to know that this book may now be had in Appleton's Popular Library for 25 cents.)

V.

The formation of Children's Reading Circles in connection with school work has had as its main objects the establishing of this vital contact of what is best in the field of books and the supplementing of certain lines of work carried on in the school, such as history and geography. The main problem is found in the selection of books of the first-class, and in using them to best advantage after they have been selected. The already overworked teacher has little time to talk a book over in detail with the pupil after it has been read. If it is a book bearing on history or geography its effect will be clearly shown in the discussions in the history or geography lessons. If it is a story it may be made to furnish material for the composition lesson or for an exercise in sight reading. If it is a primary book like *The Hiawatha Primer*, the lessons may be put on the board together with the simple drawings found therein and thus made to supplement in an interesting way the regular reading lesson. Or if the class is small the book might be passed around and the children allowed to copy the work themselves. Sometimes a book is on the list which could be read with value to the school as a whole. It might take the place of general exercises. Many devices will suggest themselves to the teacher who is, himself, familiar with the books on the list.

CHAS. M. CURRY.

AMONG THE NEW BOOKS.

In the Eclectic School Reading series Scott's *Kenilworth* has been abridged by Mary Harriott Norris of the Northwestern University. As has been stated before in this department, there can be but one valid reason for abridging masterpieces as clear as Scott's, and that is the saving of time to the reader. But after all this is a most important thing in these days of many books, and one must admit that if the abridgment is judiciously done, so that the reader may still have the best of the literary features and the principal parts of the story, it seems worth while. It must be admitted, too, that Scott, with his long descriptions and episodes, lends himself readily to the shortening process. This story is brought within the limit of 335 pages. (50 cents.)

Another book in the Eclectic series is the *Story of the Great Republic*, by H. A. Guerber. The historical narrative is taken up where it was left by the same author's sketch of the colonies. As is right and wise, the part played by great men receives special attention. This gives spirit and life to the picture and offers the children worthy examples to honor and emulate. Such treatment also lays the foundation for a genuine interest in history which will stimulate pupils to wider study as they advance. (65 cents.)

Stories of Animal Life, by Charles Frederick Holder, belongs to the same series. Here, as in

the volume on history, the main purpose appears to be the stimulation to interest. The author writes from personal experience with the animals he describes, and does so in an original and attractive style. Many interesting habits of animals are told under the guise of stories, well calculated to create a desire for more. [The American Book Co.]

The latest of the Home Reading series is a story of the war with Spain entitled *Uncle Sam's Soldiers*, by Oscar Phelps Austin. The purpose is instruction in modern military methods, and the reader finds the purpose richly realized. The sixty or more illustrations are in themselves full of information, showing, as they do, such things as signal practice, uniforms, relative sizes of armies, annual pay to men and officers, rations, transportation methods, fortifications, etc. The story itself narrates a series of visits to various points of military and naval interest, among which are included expeditions to Cuba and Manila. The book is prefaced with an analysis by chapters, and suggestive references for further reading under each head. [D. Appleton & Co., 346 pages, 75 cents.]

A very successful attempt to supply the need which many teachers feel of a help for opening exercises has been furnished in a volume entitled *True Life, or Lessons on the Virtues*, by W. R. Houghton. The title of each chapter in the volume is the name of some virtue or moral excellence. In every chapter there are three topics. The first topic is a lesson in explanation of the virtue. This is followed by two topics, each consisting of one or more brief authenticated stories, illustrating the virtue and imparting reality to the abstract ethical principle. In an extended appendix suggestive questions and answers are given upon each lesson, so that no teacher need find the book impracticable. It is certain, however, that teachers who think for themselves will prefer to make their own adaptations and applications. The book contains material enough for an entire year, and will be most welcome to a large number of teachers. [Fayette Publishing Co., Connersville, Ind., 232 pages, 60 cents.]

In the study of German as a foreign language there appears to exist the usual difficulty of filling the gap between school books and works of general literature. It is to meet such difficulty in part, at least, that Professor Sigmon M. Stern offers an edition of Jung-Stillings' *Lebengeschichte*. This has several features that adapt it to the purpose for which it is edited; such as the subject-matter, giving an intimate account of Goethe as well as of the author's own earlier life, its high rank as German literature, its easy, simple style, its idiomatic German, and the beauty and strength of the character which the autobiography portrays. "Jugend," "Wanderschaft," and "Lehrjahre" are the divisions included in this volume. There are a brief introduction and a sufficient vocabulary. [Henry Holt & Co., 284 pages, $1.20.]

An artistic little volume of poems, in green cloth, with a suggestive cover design, bears the title *Sea Drift*. The poems are all short, but they have the freshness and vigor of the sea air itself, and at the same time the tender sentiment that one links with roses, twilight, springtime and starlight.—

> The hum of bees about a bursting flower,
> The blithe down-patter of a summer shower,
> The lull of water and the lisp of wave,
> Or rush of sea foam from some sea-bound cave.

Love poems predominate, and it is noticeable that this love is of the patient, deep, eternal type that can wait, if need be, ages to be satisfied. It is like that in Browning's "Evelyn Hope." There is a flavor, too, of Keats and of Shelley, both of whom are eulogized. The little poem called "Awards" is a fair sample of the quality and the style:

> A hero's crown for that man of men
> Whose right arm shall prevail!
> But what befits their prowess then,
> What laurels shall their brow attain,
> What guerdon to their lot remain,
> And what hosannas hail,
> Who fail and fail and fail again,
> And rise again—to fail?

"Afterthought," "Be Satisfied," "I Had a Friend," "Pity, O God," are much superior to the average verse now published, and it is to be hoped that the author, Grace Ellery Channing, will give us more of the same quality. [Small, Maynard & Co., $1.50.]

The announcement made from the department of public instruction at Indianapolis that the work of the township institute this year will include a study of adolescence will give something like concrete interest to Dr. Stuart H. Rowe's book on *The Physical Nature of the Child*. This remark, however, does not suggest anything like the whole scope of the book, for there are chapters on the special senses, on "Enunciation," "Nervousness," "Fatigue," "Disease," "Habits of Posture," etc. The writer assumes that the superiority of present-day teaching over that of a generation ago is largely due to a more general observance of two fundamental principles; (1)

that action is the law of growth, (2) that individuals vary enormously in their capabilities for different kinds of mental and physical action. The book strikes us as one of the most practical helps for sensible child study that has yet appeared. [The Macmillan Co., 207 pages, $1.00.]

The following books have been received and will have more extended notice in the October issue:

D. APPLETON AND CO.

Our Navy in Time of War, by Franklin Matthews. 275 pages. 75 cents.

Plant Relations, by John M. Coulter. 264 pages. $1.10.

AMERICAN BOOK CO.

Method in Education, by Ruric N. Roark. 348 pages. $1.00.

HENRY HOLT & CO.

Elementary Studies in Chemistry, by Joseph Torrey Jr. 487 pages. $1.25

Cinq Histoires, by Méras and Stern. 152 pages. 80 cents.

WERNER SCHOOL BOOK CO.

Advanced Lessons in Human Physiology and Hygiene, by Winfred E. Baldwin. 400 pages. 80 cents.
Elementary Arithmetic, by Frank A. Hall.
Complete Arithmetic, by Frank A. Hall.

THE MACMILLAN CO.

Chemical Laboratory Manual, by H. W. Hillyer, Ph. D. 200 pages. 90 cents.
Educational Aims and Educational Values, by Paul Hanus. 211 pages. $1.00.

SCOTT FORESMAN & CO.

The New Rhetoric, by Herrick and Damon. 476 pages. $1.00.

INDIANA STATE BOARD QUESTIONS FOR AUGUST, WITH DISCUSSIONS.

SCIENCE OF EDUCATION.

BASED ON GENERAL PEDAGOGY.

1. A late writer says, "The child has acquired more first-hand ideas before he comes to school than he acquires during all the remainder of his life." What is here meant by first-hand ideas?
2. What use must the teacher make of the stock of ideas which the child has when he enters the school?
3. Is it desirable that the work of the school increase the child's stock of first-hand ideas? Why?
4. How can the work of the school properly conducted, increase the child's stock of first-hand ideas?
5. When it is impossible for the child to study the object directly, what means should be employed to acquire a correct knowledge of it?
6. In the study of such subjects as Geography and History, what is the chief hindrance to a correct knowledge of the objects presented?
7. What do you consider the true aim of physical culture in the school?
8. Should the elements of drawing be taught in the public school? Give reasons for your answer.

1. Ideas acquired directly through the senses. All knowledge comes directly or indirectly through the senses.

2. The teacher must make this stock of ideas the basis for the work he does.

3. The work of the school must both increase and enrich the stock of first-hand ideas. Both are essential to development.

4. By the presentation of new material along the lines prescribed in the course of study. The work must be dictated by the child's nature and attainments and must be orderly and logical.

5. Pictures, oral and written descriptions, models and reproductions.

6. The difficulty in imaging the objects.

7. Health and grace.

8. Yes. In school work the "give" should always equal the "take" and drawing is a good expression subject.

BASED ON PLATO'S REPUBLIC.

1. "The process in education is one of cultivation, one of developing, and not one of informing and of moulding as in Oriental conception." Comment on this quotation.
2. Give short statement concerning the life and work of Plato's master, Socrates.
3. What can you say of Plato as a teacher? Mention his three greatest elements of strength as teacher.
4. What was Plato's proof for the immortality of the soul? Are his arguments convincing?
5. What is the pedagogical value of the *Republic* of Plato?
6. Do you think the time of the teachers could have been occupied in the study of another book with better results? Why?

1. Modern pedagogy rather blends the architectural and the germinal theories of education, making the work of the teacher a coordinating one. Plato held to the germinal theory. For full discussion see De Garmo's *Essentials of Method*.

2. Socrates was born at Athens 470 B. C. He was a sculptor, was very robust, knew the Greek poets, understood arithmetic, geometry, astronomy and philosophy. He taught in an informal way, by conversations, though he disclaimed the title of teacher.

3. He possessed a powerful personality. He had traveled more than most men of his time. He was an aristocrat by birth, and hence cultured. He was attractive in manner and appearance and loved young people. (1) Insight into human nature, (2) clear conception of truth, (3) power to present truth.

4. Plato was an Idealist. He taught that the essence of the ideal is divine, and that man's effort to realize the ideal is proof of the divine within him and hence of his immortality.

This is a matter of opinion.

5. The value of any pedagogy is its basis of truth. This none has ever seen more clearly than Plato. And though the application of it may change with time and conditions yet the basis is the same.

6. Plato's *Republic* is the source to which every citizen who cares for his government should look.

GEOGRAPHY.

1. Discuss the geography, climate, products and inhabitants of the Mississippi valley.
2. What is the cause and force of the discussions on the Venezuelan boundary?
3. Name the principal things which influence the location and growth of cities.
4. Where is the Dead sea? How do you account for its characteristics?
5. Describe the water route from Australia to Dantzig.
6. In what countries is the world's supply of sugar and cotton produced?
7. Explain how you would teach pupils concerning longitude and latitude, and state the value of such knowledge.

1. It embraces nearly the whole central belt of the United States lying between the Appalachian and the Rocky mountain systems, and is for the most part well watered. Climate varies with the latitude, having little variety in altitude. The eastern and central portions are particularly fertile, the northern part being covered by glacial drift and much of the southern part by alluvial deposit. Nearly all occupations are found, agriculture being the chief. The agricultural products range from cereals to sugar, rice and cotton. Lumber and mining are important industries. The inhabitants are representative Americans, free from eastern provincialism, with a large admixture of European elements.

1. The boundary between Venezuela and British Guiana has never been definitely located. Each country claims the same territory in certain places. The dispute is now before an arbitration tribunal.

3. Waterways, harbors, mountain passes, natural products, water powers.

4. In south eastern Palestine. It is in a basin with no outlet.

5. Indian ocean, gulf of Aden, Red sea, Suez canal, Mediterranean sea, strait of Gibraltar, English channel, strait of dover, North sea, Kiel canal, Baltic sea.

6. Chiefly in the West Indies, Guiana, Venezuela, British India, China, Hawaii, Louisiana, France, Germany; United States, China, India.

7. Longitude and latitude are best taught with a globe. The knowledge gives a basis for location, and facilitates calculations as to relative position and relative time.

ARITHMETIC.

1. What is the entire lateral surface of a square pyramid whose base is six feet on a side and whose altitude is 12 feet?
2. Define the four fundamental operations.
3. The value of a merchant's stock decreases 30% and again 20%; then it increases 25% and again 25%. It was then worth $106.25 less than at first. What was the original value?
4. Which is the better investment, a 6 per cent. bond selling at 8 per cent. discount, or an 8 per cent. bond selling at 10 per cent. premium? How much better?
5. On a certain map the linear scale is one inch to five miles. How many acres are represented on this map by a quarter of a square inch?
6. A man travels northward 24 miles, then eastward 36 miles, then southward 10 miles, then westward 12 miles, then northward 4 miles; how far was he then from his starting point? Illustrate by drawing.
7. The interest of $456 for 3 years, 5 months, 18 days is $79.04; what is the rate?

1. The height is the altitude of a triangle whose base is 3, half the width of the base, and whose hypotenuse is $\sqrt{3^2+12^2}$, or 12.37—or the slant height. $\frac{12.37\times 6}{2}\times 4 = 148.44$.

3. 1st loss of 30% leaves 70%, 2nd loss of 20% leaves 56%. 1st gain of 25% makes it 70%. 2nd gain of 25% makes it 87½%. 100%—87½% =12½%, net decrease. $106.25÷.125=$850.

4. 6 on 92=6$\frac{11}{12}$%. 8 on 110=7$\frac{8}{11}$%. 7$\frac{8}{11}$—6$\frac{11}{12}$ =$\frac{180}{132}$, difference in favor of the 8's.

5. 1 sq. in. represents 25 sq. miles. ¼ sq. in. represents 6¼ sq. miles, or 4,000 acres.

6. His distance is the hypotenuse of a triangle of which the base is 24 and the altitude 18. $\sqrt{18^2+24^2}=30$.

7. $456 at 1% for the time is $15.80⅔. 79÷15.80⅔ gives 5 as the rate per cent.

HISTORY.

1. What must be known of English History that the pupil may understand fully the history of the settlements of Plymouth and Massachusetts Bay?
2. Rhode Island has two capitals and Connecticut had two capitals down to 1873. Why?
3. What military movements were planned by the British in the campaign of 1777? What success attended these movements?
4. Why was there an imperative need for a new form of Government for the United States after the acknowledgement of our independence?
5. What effect has the extension of railroad and telegraph facilities in the United States had upon the stability of our government? State reasons for your answer.
6. What was the "Dred Scott" decision? What would its effect have been?
7. State the respective advantages and disadvantages of the Northern and Southern states in the civil war.
8. What have been the principal issues between the great political parties since the civil war?

1. The persecution of those who dissented from the established religion, and the civil hardships imposed by Charles I.

2. The respective capitals were established while the colonies were yet distinct; that is, before Providence and Newport had united under the one government of Rhode Island, and before New Haven and Hartford had united under the one government of Connecticut. In neither case was either city willing to yield the honor or advantage of holding the seat of government, and so the legislatures alternated.

3. (1) The opening of the Hudson river and the line northward to Montreal. This failed. (2) The capture of Philadelphia. This succeeded, though it did not crush the Americans as Howe had planned that it would.

4. The great need was *Union*, and this the articles of confederation did not secure. Each state felt its own supremacy and was jealous of the others. There were laws without power to enforce them, and powers conferred with no provision for exercising them.

5. The opening of lines of communication and commerce has been one of the greatest of the unifying forces.

6. It was an opinion which five of the nine judges of the Supreme court expressed, to the effect that Dred Scott, a negro slave, had not gained his freedom by going with his master into free territory. It was practically a political manifesto, the effect of which was to stimulate

the anti-slavery party to more resolute action.

7. The North had greater resources, had control of the national government, and had the conviction that the chief cause of the war, slavery, was fundamentally wrong. The South took control, early in the war, of the fortified posts and stores in that section, England gave her at least moral support, and the question of secession was really an undecided one so far as the constitution was concerned. As to the actual fighting, the South had an advantage in waging war at home.

8. Reconstruction, "resumption," civil service, tariff, free coinage, foreign policies.

GRAMMAR.

The hero who wept that there were no more worlds to conquer, seems never to have learned that within his own bosom lay a restless and turbulent kingdom, over which, with all his armies and all his power and valor, he had as yet attained no dominion.—*Haven*

1. (a) Kind of sentence with reference to form?
 (b) Name an adjective clause.
 (c) An adverbial clause.
 (d) An objective clause.
2. What does each of the following phrases modify: (*a*) *within bosom*; (*b*) *over which*; (*c*) *with power and valor*?
3. Give use and construction of (*a*) *to conquer*; (*b*) *to have learned*; (*c*) Give the principal parts of *were* and *lay*.
4. Name (*a*) all the modifiers of *kingdom*; (*b*) *had attained*.
5. Select and classify as parts of speech all words that connect clauses and phrases.
6. Give the syntax (case and reason) of (*a*) *worlds*; (*b*) *kingdom*; (*c*) *which*; (*d*) *valor*
7. Parse (*a*) *who*; (*b*) *there*; (*c*) *never*; (*d*) *had attained*; (*e*) *as yet*.
8. In the analysis of sentences, what is the special advantage in the use of (*a*) oral analysis; (*b*) diagrams?
9. How do the purposes and methods of teaching "Language Lessons" differ from those of "Grammar?"
10. In what grade of school should the study of technical grammar be commenced? Give reasons.

1. (a) complex. (b) "who wept that there were no more worlds to conquer." (c) "that there were no more worlds to conquer." (d) "that within his own bosom, etc."
2. (a) "lay." (b) "had attained." (c) "had attained."
3. (a) Infinitive, adjective modifier of "worlds." (b) Predicate. (c) are—were—been, lie—lay—lain.
4. (a) "restless and turbulent." "Over which —— attained no dominion." (b) "with all his armies and all his power and valor;" "over which;" "as yet;" "no dominion."
5. "Who," relative pronoun; "over," preposition; "which," relative pronoun; "with," preposition; "and," conjunction.
6. (a) Nominative case, predicate; (b) nominative case, predicate; (c) objective case, principal part of the prepositional phrase; (d) objective case, one of the principal parts of the compound prepositional phrase.
7. (a) Relative pronoun, etc." (b) an expletive. (c) an adverb, etc. (d) an attributive verb phrase, etc. (e) an adverb, etc.
8. The analysis of sentences should be oral or written as a rule. Diagrams tend to formal grammar. They may be used for convenience now and then if the teacher will see to it that they are made a means or device and not an end.
9. The end in teaching "Language Lessons" should be the art of language. They should give the pupil power to express himself skillfully in written or oral language. The end in teaching Grammar is the science of English. Incidentally it gives the pupil power to express himself. The methods of teaching the two will differ accordingly.
10. Not lower than the seventh for two reasons: First, the mind of the child is not sufficiently developed before this time and there is work in language of much more importance which pupils below the seventh should do. Second, two years will be ample time for the pupil to learn all he need to know of technical grammar.

LITERATURE.

1. Why was the early American literature imitative in its form and theological in its contents?
2. In what ways have Harvard and Yale Colleges influenced the literature of the country?
3. Who was Jonathan Edwards, and what are the characteristics of his writings?
4. Upon what issues have the great theological controversies of the country been made, and with what effect upon the people?
5. Give a short statement of the life of Washington Irving, and of his writings.
6. How do you account for the fact that Longfellow's poems have been translated into so many of the languages of modern Europe?
7. Write an outline of "Snow Bound."
8. What peculiarities are observable in the writings of authors in the different sections of our country.
9. What is meant by "dialect writings," and what will be their probable influence upon our literature?
10. What influences are at work to bring the women of the country forward prominently in our literature?
11. Make a list of ten American books well suited to the highest interests of American youth.

[These questions are identical with those used in May, and answered in the June EDUCATOR. We reprint them, as many of our new readers may not have access to that issue.]

1. The early writers naturally looked to the mother country for models. The settlement of New England, the home of our early literature, grew out of theological controversies, which also formed the main intellectual interest of the colonists.

2. By preserving and handing down the highest ideals of American culture and learning.

3. "The most eminent of American metaphysicians," born in 1703, died in 1758, three months after he had been called to the presidency of Princeton College. Known mainly as the author of *An Inquiry Into the Freedom Of the Will*, which maintains in the most powerful way the Calvin-

istic thesis that the will is not self-determined and free.

4. In a general way upon revolts against authority, resulting in greater freedom of individual judgment. Perhaps the greatest effect has been to fix the mind upon essentials instead of externals.

5. Irving was born in New York 1783; slight education in the schools; traveled in Europe; *Salamagundi*, 1806; *Knickerbocker's New York*, 1809; minister to Spain, 1846; died 1859. A simple division of Irving's work after 1809 is that suggested by Pattee:

1. The period of sketches; *Sketch Book*, *Bracebridge Hall.*
2. Spanish themes; *Voyages of Columbus*, *Life of Columbus*, *Mahomet and His Successors*, *Conquest of Granada*, *The Alhambra.*
3. Western American themes; *Tour of the Prairies*, *Tales of a Traveller.*
4. Biography; *Goldsmith*, *Washington.*

6. His wide sympathy awakes universal interest.

7. The poem deals with the experiences of a New England family while snow-bound. The poem begins with the approach of the storm, tells how the home was gradually shut in, how the evening was spent around the fireside, how the road was broken out and finally how "the chill embargo" was completely thrown off.

8. Certain writers are governed in their selection of material by the sections of country with which they are acquainted, and occasionally we find their work full of the peculiar idioms and ideas found in these sections, but no general law can be stated. For illustration the work of Mary E. Wilkins, Hamlin Garland, Geo. W. Cable, Bret Harte, Joel Chandler Harris, James Whitcomb Riley, may be cited.

9. "Dialect writings" are those in which the peculiar forms of speech belonging to a limited section are reproduced. Such grow out of attempts to reproduce the exact verities of life. They may create demands for greater exactness of portraiture on the part of our writers.

10. Mainly the opening of all the various avenues of education and culture to women; such as, increased educational advantages, women's clubs, admission to various professions, etc.

11. Franklin's *Autobiography*, Irving's *Sketch Book*, Cooper's *Last of the Mohicans*, Longfellow's *Poems*, Emerson's *Essays*, Hawthorne's *The House of the Seven Gables*, Miss Alcott's *Little Men* and *Little Women*, Wallace's *Ben Hur*, Kipling's *Jungle Books*, Holmes' *Autocrat of the Breakfast Table.*

PHYSIOLOGY AND SCIENTIFIC TEMPERANCE.

1. The act of breathing is involuntary. How is respiration produced? Answer in detail.
2. "Any system of ventilation that does not provide for a constant renewal of the air is defective." Discuss, giving two or more reasons why this statement is true.
3. Why is the air so delightfully refreshing after a rain or a snow storm? How would you illustrate your answer to a class of pupils?
4. Describe the vocal organs. How is voice produced?
5. How many pairs of cranial nerves? How many pairs of spinal?
6. What are the three principal excretory organs? Give the functions of each.
7. Discuss alcohol in its relation to crime.

1. The chest capacity is increased (1) by muscular action drawing the diaphragm downwards away from the thoracic cavity, (2) by the action of the intercostal muscles lifting the lower ribs. The air flows into the lungs which have naturally expanded, and is expelled when the lower ribs and the diaphragm resume their natural positions.

2. The breathing of air (1) deprives it of oxygen (2) loads it with poison. Ventilation should be sufficient to prevent its reinhaling. There should be at least one cubic foot per minute for each person.

3. The impurities afloat in the air are washed to the earth by the rain or the snow. By water sprays.

4. Voice is produced by the vibration of the vocal cords, strengthened by rosonance cavities, and modified by the tongue, palate, lips and teeth. These cords are two elastic bands drawn across the voice-box or larynx.

5. Twelve. Thirty-one.

6. The kidneys, excreting urea; the skin excreting urea, and certain salts; the lungs excreting carbon dioxide.

7. A very large proportion of crimes is committed by men under the influence of alcohol. Intoxication benumbs the moral sense, and excites the animal propensities in man. Excessive use of liquor unfits him for duty, destroys his self-respect, squanders his means and dissipates his vitality.

READING.

1. Should the following be read rapidly or slowly and why?

"The curfew tolls the knell of parting day,
The lowing herd winds slowly o'er the lea,
The plowman homeward plods his weary way
And leaves the world to darkness and to me."

2. Where should the pause be in the following?

"And as the greatest only are
In his simplicity sublime," etc.

3. What is sight reading? Is it desirable?
4. Is vocal training essential to good oral reading? Why?
5. Can one pupil read a dialogue as effectively as two or more? Explain.
6. What in the reader is essential to the full expression of the thought and feeling of the writer?

1. Slowly. The solemnity and general melancholy of the scene pictured requires such rendering. Notice the idea of slow time or movement in each of the first three lines.

2. The following marking will locate pauses, the double bar indicating the longer and the single bar the shorter.

"And ‖ as the greatest | only | are ‖
In his simplicity ‖ sublime."

3. The effort to render a new selection without an opportunity first to study the piece in all its details. It is a very valuable and therefore desirable exercise. It tests the acuteness of the pupil's mind as nothing else will, and besides it is the kind of reading required in actual life.

4. Vocal training is just as essential to *good* oral reading as it is to good singing. All the varying moods and ideas of the mind must be expressed in oral reading, and only the carefully trained voice can approximate these.

5: No. One person reading a dialogue is obliged to assume at least two personalities. It requires much more ability to do this than to assume one character and carry it through without change.

6. Three things may be named as essentials: (1) the complete mastery of the author's medium of expression, his language, his vocabulary; (2) a complete comprehension of the thought and feeling of the writer; and (3) such control of the vocal organs as enables them to respond to all the phases of thought and feeling expressed.

EDUCATIONAL, LITERARY AND GENERAL ITEMS.

The friends of President J. J. Mills of Earlham College will be glad to learn of his improved health.

Joseph E. Kelley is the new superintendent of the New Harmony schools, having resigned a similar position at Plainfield, Ind.

The "State Manual and Uniform Course of Study" will be sent to any address for the price of the postage, 3 cents; the "Township Institute Outline" for 2 cents.

Lawrence E. Carter, a former teacher in the Anderson school, and who had been taking work at the I. S. N. this summer, died at his home, Plainfield, Ind., of typhoid fever, Aug. 11, 1899, after an illness of one week.

The arbor and bird day programs do not appear in the township institute outlines this year. These programs will be printed in a special pamphlet and sent to the county superintendents for distribution among the teachers, about October 1st.

T. C. Kennedy, who was graduated this year from the Indiana State Normal, lost his wife by typhoid fever August 21. Mr. Kennedy himself is just recovering from an attack of the same fever. His many friends will be pained to hear of his affliction.

O. H. Bowman, for six years in charge of the Mentone (Ind.) schools, has resigned to take the superintendency at South Whitley. The vacancy at Mentone is filled by the election of W. H. Davis, who has been spending the past year in the State Normal at Terre Haute.

A new Hoosier poet that is arousing considerable attention is Alonzo Leora Rice of Ray's Crossing. Mr. Rice has contributed quite largely to some of the best periodicals, and his simple, pleasing style is sure to grow in favor. THE EDUCATOR hopes to say more of him soon and to show some of his work.

Messrs. Small, Maynard & Co. are issuing a second edition of *The Dreyfus Story*, by Richard W. Hale. This handy statement of facts and law about the great case has been revised and brought down to date, and will be available and most useful for "reading up" in connection with the new trial of Dreyfus.

Mr. George R. Wilson, chairman of the executive committee for the Indiana State Teachers' Association is out with an initial letter which rings the first note for a successful meeting next winter. He urges attendance and payment of dues, and pledges the committee's efforts for a unique and practical program.

Hinds & Noble have purchased the plates and will at once publish new revised editions of Sherrill's *New Normal Question Book*, price $1.50; Henry's *New High School Question Book*, price $1.50; Sherrill's *Normal Reader*, price $1.25; Lind's *Best Methods of Teaching in Country Schools*, price $1.25, and Jeffer's *Shortest Road to Cæsar*, price 75 cents.

Four large charts, on heavy paper, with eyelets for hanging on the wall, contain two sets of letters, capital and small, in vertical script. The letters are large enough to be readily distinguished across a schoolroom, and the strokes are heavy, black lines. The forms are simple and symmetrical. The system is Barnes's, published by the *American Book Co.*

Professor H. T. Miller, who has taught the romance languages at Butler college since 1893, has received a fellowship in the University of Chicago and will study there for a year. His work in French and Spanish will be taken by Edgar W. Abbott, a graduate of Franklin Col-

lege, and for three years fellow in romance languages at Chicago. Mr. Abbott is a young man of considerable experience, and well equipped for his specialty.

Through the kindness of Superintendent Noble Harter, Warsaw, Ind., THE EDUCATOR is favored with a reprint of "Studies on the Telegraphic Language" which he prepared for the *Psychological Review* in collaboration with Professor W. L. Bryan. It is a study in the psychology of an occupation in general, and of habit in particular. It will be found of much interest to all who are devoted to psychological research.

Miss Frances Benedict, former superintendent of the Worthington (Ind.) schools, has accepted a position as teacher of English in the Marion high school. Miss Benedict is a woman of fine attainments, and she will bring to her work not only a large degree of common sense, ability, and judgment, but also a wide range of experience. She is one of the few women who have successfully managed a system of public schools. She is a graduate of the Indiana State Normal, and has taken considerable work at the Indiana University. In securing her for the Marion schools Professor Moore has still farther strengthened his teaching force.

Mr. Walter H. Page has resigned the editorship of *The Atlantic Monthly* and has accepted an invitation to take a prominent post in the direction of the literary work of the allied houses of Harper & Bros. and the Doubleday & McClure Co. His successor in the editorship of the *Atlantic* is Mr. Bliss Perry, known in literature as the author of two novels and a number of essays and stories. Since his graduation from Williams College in 1881, Mr. Perry has been in the department of English, first at Williams, and afterwards at Princeton University, where he was lately appointed to the Holmes professorship of English literature.

They are building a handsome new structure at Bedford, Ind., to serve as one of the ward school buildings. It is of Bedford stone, of course, and will be modern and handsome. The community is taking great pride in it. The board, Messrs. C. S. Norton, E. K. Dye, and John Haase, inspected some of the best buildings of the state and have evidently profited by their experience. E. U. Johnson is principal. W. E. Alexander is still superintendent of the city schools. One of the teachers in the new building is Mr. E. C. Consalus who helped roll up the largest list of subscribers for THE INLAND EDUCATOR that Lawrence county ever gave.

The Indiana *State Manual and Uniform Course of Study* recently issued by the department of public instruction is a revision of that published in 1897. About the same commendation could be given that THE EDUCATOR gave last year, but the manual is now in the hands of the teachers who will soon learn its value if they have not already done so. The fact that the authors of the various text-books have themselves assisted in outlining the course should increase its value, but its great worth is in offering intelligent direction that enables the schools of the state to follow the same general course. In addition to the usual outlines for the grades, there are added several pages of miscellany and a suggestive course for Indiana high schools.

The main building of the Eastern Illinois Normal School at Charleston was dedicated August 29. An elaborate program was carried out to the entertainment of thousands of visitors. Dr. Richard Edwards of Bloomington was the orator of the day. The new school is well equipped, and will be especially strong in professional courses. The president, Dr. L. C. Lord, will teach psychology, and Francis G. Blair applied psychology. Professor Louis H. Galbreath, who has just recently died, had been engaged for the chair of pedagogy.

A second new normal school in Illinois at DeKalb is to be dedicated September 22. A parade of civic and military organizations, with about 10,000 school children is to be a feature of the celebration. The governor and his staff are expected. A great effort is being made to arouse interest in this school all over northern Illinois.

The fine new school building at Washington, Ind., which replaces the one that was burned some time ago is a model of excellence in every particular. The building is of brick with stone trimmings and has every modern convenience and equipment. The first floor, besides a spacious hall, has the superintendent's office, library, and eight rooms for the grades. The second floor is occupied by a large assembly room and six or eight recitation rooms and laboratories for the high school. The outside appearance and arrangements are especially commendable. The grounds at the front of the building, under the artistic hands of Hamlet Allen, principal of the high school, are a marvel of landscape gardening. Sufficient space has been provided at the rear of the building for large, separate play grounds for boys and girls. Superintendent Axtell is largely responsible for the general improvement in the Washington schools.

SCHOOL MUSIC BY CORRESPONDENCE.

Two Courses offered 1899—Elementary and Advanced. Each course includes 12 lessons and will be found helpful and practical to the busy teacher. Tuition reasonable. For information write. H. E. OWEN,
Terre Haute, Ind.

Messrs. Akers & Wagnalls, proprietors of the Garvin Commercial College, Terre Haute, are about moving to more commodious quarters in a fine new building, and will be equipped for better work than ever before. As an introduction to their handsome new catalogue they express their desire to be conservative in promises, make only such statements as later experience will warrant, and let the school and its work speak for themselves. If you are thinking of a business course send for their catalogue.

The catalogue of DePauw University for the year just closed is received. It seems that DePauw has had a prosperous year. About $30,000 was collected, pledged, or bequeathed to the University this last year, for endowments and sustaining funds, in addition to the regular income. The faculty will be increased. The DePauw estate will be settled soon, adding $200,000 more to endowments. The University has really entered a brighter day. Catalogues will be sent on application to the Registrar, Greencastle, Ind.

Among the correspondence schools of the country the National Correspondence Normal College at Fenton, Mich., appears to be especially energetic and thrifty. In about four years it has enrolled over 6,000 persons who desired to advance but who could not go away to school. These institutions surely have a place in our educational system, and this seems one of the best.

At the request of many teachers who desire to purchase the Speer Number Chart for their personal use, the publishers, Bellows Bros., Studebaker Bldg., Chicago, have decided to reduce the price 40%, or from $12.60 to $7.50 as the chart requires no agency work. The Striker Primary Reading Chart has been reduced to $8.60. The firm is going to do a mail order business.

For Sale—Volumes I, II, III, IV, V, VI, VII and VIII of the INLAND EDUCATOR, in good condition. Address—Anna Freeman, Fairmount, Ind.

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OCTOBER, 1899.

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November Meteors The article on Meteoric Showers, by Professor Miller, found in this issue of THE EDUCATOR is commended to all our readers as well filled with both interest and information. This is the big year for meteors, and coming, as it does, but every third of a century, it will be the single opportunity of a life time, for the great majority of people, to witness the large fall of meteors. The discussion that Professor Miller gives to the relation between comets and meteors brings out some points not generally known. We hope every subscriber will find time to read the article.

* * *

Is Paris Worthy? Next year Paris will invite the world to witness her great exposition of the products of art, science and industry. Such a display is supposed to be in the interests of culture and of civilization. It asks the other nations to come and see that this, the foremost of the great Latin nations, is up with the rest of the world in all that makes for human progress. Such an exposition is a most worthy endeavor. It is well calculated to encourage the best. It is a great instructor, and, as the French Commissioner General declared only just the other day, "it is through education and instruction that man enters into life." The crowds will come and admire, and go away and praise. All this ought to make a red-letter day in the history of the French Republic. It ought to show the world the glory of republican government—a realization of the spirit that hastened across the sea in sympathy with the "spirit of '76." But how shall we harmonize all this fine sentiment with the military system that hangs over France like a great nightmare—a system so intrenched behind its own brazen effrontery that the worst scandals, though well known, go unpunished, a system so organized for a relentless prosecution of race hatred as to make a travesty like the Dreyfus case possible! Is Paris worthy? Let us hope that the spectacle we have seen is not the real France. Let us hope that a few great souls like Picquart and Gallifet and Labori will stand up for justice until the republic can throw off its incubus.

* * *

A Good Word for Indiana. The Honorable Henry R. Pattengill, ex-state superintendent of public schools in Michgan, and now editor of the *Michigan School Moderator*, has this to say in his issue of September 7: "Institute work in Indiana by ye Moderator editor this summer again emphasizes the fact that the Hoosier teacher is more mature, makes more of a profession of teaching, and as a rule is ready for higher work in the institute. From one-fourth to one-half the teachers are men. In White county, of 164 teachers, not one receives less than $35 per month, and only beginners receive that. Experienced teachers of rural schools get from $50 to $62 per month." This is very nice indeed. It would hardly be generous for Hoosier teachers themselves to indulge in such gratulatory expressions about themselves; but when a man of Mr. Pattengill's standing volunteers the statement we feel like passing it along, first to encourage Indiana teachers, and second to urge on our Michigan friends to higher standards. Let Indiana teachers, too, make sure that they continue to deserve such high praise.

* * *

Dr. R. G. Boone. The resignation of Dr. R. G. Boone from the presidency of the Michigan state normal college at Ypsilanti will be of interest to a large circle of teachers throughout this group of states who know him so favorably as a teacher and as an institute instructor. The real cause of the resignation is not stated, though it has been known for some time that there was friction between the president and the powers. Of one thing we are sure, namely, that the school loses more than Dr. Boone does. Of greater interest still

is the announcement that he has been chosen to fill the vacancy at Cincinnati, Ohio. There were numerous eminent educators whose names were used in connection with the Cincinnati place, and Dr. Boone's appointment will be gratifying to many friends. We were pleased to notice that while the position was open a petition of influential citizens was sent to the board of education asking that political considerations be not allowed to enter into the selection of a superintendent. Readers of THE EDUCATOR will have the pleasure at an early date of reading an article from Dr. Boone, copy for which is already at hand.

* * *

Dewey Comes Home. By the time THE EDUCATOR reaches its readers Admiral Dewey will have gone through the first part of a reception which is likely to be the warmest ever accorded a returning hero in America. September 28 is the date set for the arrival of the "Olympia" at New York, and the next day is set for the naval parade. The Admiral is said to dread the ordeal of reception which will doubtless last for weeks. It is perfectly natural that there should be the greatest kind of enthusiasm. The picturesque way in which he led his fleet into a harbor planted with mines, and the brilliance of his victory, together with the coolness and the modesty of the man himself have combined to give him the warmest place in the hearts of Americans. When the cry goes up "What's the matter with Dewey?" it is doubtful if there will be a man, woman or child in the Union, excepting perhaps Mr. Norton of Harvard, who will not be willing to respond "He's all right!" Let us hope that he will not become a victim of his friends, and be so very much received as to be killed with kindness.

* * *

The Yellow Label. Nearly all the best periodicals are published on the plan of being continued until otherwise ordered. THE EDUCATOR follows this plan and hopes all its subscribers will fall in with it. We cheerfully stop subscriptions when so requested if arrearages are paid. We have had subscribers in the past who allowed the paper to run along until there was a delinquency of six months or a year, and who then sent word that they did not care for it but sent no money. We earnestly hope none will be so thoughtless this year. To do this injures every other subscriber since it involves a loss which no publisher can continuously afford. If you move away without asking us to change your address or stop your paper the result is the same. Please, therefore, keep us posted. Notice the date on your label, and if any changes are necessary send word directly to the office.

* * *

Sympathy. It is often remarked that absolutely nothing will serve a teacher as a substitute for a clear knowledge of the subjects to be taught. We would rather emphasize this than take exceptions to it, but if there is one quality which more nearly than another will make up for the lack of knowledge it is sympathy. It will cover up a mass of professional unfitness and a world of pedagogical ignorance. Happily the best professional qualifications are not inconsistent with this full sister to charity, and pedagogical study is apt to beget rather than to destroy it; but let us be sure that whatever else we possess we have sympathy. A fine example of it was shown when Superintendent Soldan of the St. Louis schools instructed the teachers to exercise special care for the health and comfort of their pupils during the opening days while the weather was intensely hot. We have no doubt that hundreds of superintendents did the same thing, and that teachers, generally, have the physical welfare of students at heart, but there is little danger that this fine quality will be too much or too often praised, wherever we find it.

* * *

Discipline. To attend the average teachers' meeting in these days and note how rarely anything is said about discipline one would almost think that it had ceased to be a problem of the schoolroom. Such an impression would be wrong, of course, for human nature is not yet perfect, and youthful activities still come in conflict with that condition for study which requires a reasonable degree of quiet. Yet, problems of discipline are not the bugbear that they once were; first, because we understand child nature better, and second, because ideals of a well-ordered schoolroom have changed. We no longer think that the processes of activity which belong to a busy school either can or should be noiseless. But best of all the teacher understands herself and her work better. In a paragraph on "Wise Discipline," in *The Teachers' Institute*, Colonel Parker makes the startling assertion that "in ninety-nine cases out of a hundred the causes of punishment are to be found in some weakness of the teacher." That seems rather hard on the teacher to say nothing of the pupil. We should like to see statistics before accepting the Colonel's per cent, but honestly, isn't there a large element of truth

in the statement? Test it by calling up experiences in which you have thought it necessary to maintain order by punishment, and does it not appear that as good or better results could have been reached by other and milder means? We do not insist that severity is not necessary sometimes, but we are all learning that there are more powerful motives with a boy than mere force, and that threatening, sending home, and scolding, all of which Colonel Parker regards worse than the rod, are about out of date in a well-ordered school. The best antidotes to disorder and mischief are plenty of work and a cheerful teacher.

* * *

Brief Items of Current History Next to the Dreyfus trial, which overshadowed everything else while it continued, interest has centered largely in the Transvaal. It appears that according to an agreement in 1881 between the Boer republic and Great Britain there was to be a certain equality of rights among all white persons living in the Transvaal. For example, the right to vote was granted to foreigners, or Outlanders as they are called, upon one year's residence. Since then the period has been advanced to fourteen years. Meantime the Outlanders have increased until they number three-fifths of the population and pay nine-tenths of the taxes. Most of the foreigners are Englishmen. Under the protest of Great Britain the naturalization period has been reduced to five years, and some other concessions have been granted. Additional reforms are asked for, however, and as these are in the interests of fairness to the majority it seems certain that England will insist upon a readjustment.

* * *

An interesting and important conference was held in Chicago in mid-September. It is called the Trust Conference and has met in response to a popular demand for an investigation of trusts. The avowed purpose is to seek for *the truth*. There are many people who think the trust a great evil and who regard the general tendency towards combination as threatening dire calamity. Others regard the trust with complacency and see in it a large stride towards cooperation and popular ownership of the great industries. A different view still, set forth in an interesting article by Mr. Geo. E. Roberts, director of the United States mint, in the September *Review of Reviews*, considers that the trust can not possibly control prices permanently. This view is quite different from the belief commonly held that the trust arbitrarily does make and maintain prices. The Chicago conference has distinguished representatives from all parts of the country, and, sitting as a disinterested body, its deliberations will be of much interest. It has no authority to act, but will doubtless express its conclusions in a set of resolutions.

* * *

A party of revolutionists in San Domingo has overthrown the government of which General Heureaux was president, and has established a provisional government headed by General Vasquez. There was little fighting, though President Heureaux was assassinated. The causes of revolution seem to be due mainly to personal bitterness among the leaders.

* * *

In a public address at Pittsburg, August 28. President McKinley declared in unmistakable terms the purpose of the government to prosecute the war in the Philippines to an early close, looking toward "the establishment of peace and tranquillity and a government under the undisputed sovereignty of the United States."

* * *

Messrs. Denby and Worcester, two members of the Philippine Commission still in Manila have been asked to come home without delay. This will make possible a meeting in Washington of four members of the commission, Denby, Worcester, Dewey and Schurman. It is supposed that Mr. McKinley desires their report before completing his annual message to Congress.

* * *

Another Pseudo Critic. It is nearly four hundred years since Sir Francis Bacon announced to the world his conviction that deductive philosophy was dead. It seemed rash, indeed, for one man to foretell the overthrow of a system that had been venerable for centuries, but Bacon was at least consistent in two particulars: he showed why the old system was at fault, and he offered something different. It so happens that the system he proposed has received so nearly universal acceptance that when an adherent of the old school is found he at once attracts attention as a curiosity. For example, Mr. Collis P. Huntington, a few weeks ago, had an audience and embraced the opportunity to make some caustic remarks about failures in the present school system. Mr. Huntington calls himself a self-made man, and as such doubtless feels quite justified in posing as an example of success. He does not have much to say about the aid he has had from the United States government in the shape of loans

amounting to a few million dollars, but he has a theory that the less school education a boy has the more likely he is to achieve success. This is his theory. To get it proven he must find a few examples of educated (?) failures, which is easily done of course, and say here they are; here is what the schools can do for a boy. Doesn't Mr. Huntington know that that is the way they proved propositions long before the Christian era and all down through the dark, and middle ages? Doesn't he know that his conclusion is not safe because he hasn't all the facts? We should not like even to intimate that Mr. Huntington is insincere. He simply doesn't know. But gifted as he was by nature with a large measure of common sense he ought to know that it is unfair and wrong for a man in his position to condemn, as he has, without the fullest knowledge. There are many who read what he says and accept it as truth simply because C. P. Huntington ought to know what he is talking about. It is reassuring to see the calm and easy manner in which Dr. W. T. Harris refutes the magnate's mis-statements. Mr. Huntington charges over-education. Dr. Harris shows that less than nine in 1,000 of the population are in the high schools and academies. In St. Louis an investigation of the careers of boys who had attended the high school showed that the average salary obtained was nearly $1,000, while that of the boys who had received only an elementary education was less than $500. Dr. Harris well says, too, that a man's trade or occupation takes up only one-third of his time. Hence Mr. Huntington, in claiming that school education should relate simply to the business that the boy is to follow during his life, ignores the fact that a man needs to look after the welfare and education of his family, to attend to social, political and church relations, and to be an intelligent member of the community in which he lives. As we remarked two months ago, in commenting upon the tirade of Mrs. R. H. Davis, we should be willing to accept all criticism, and be ready to profit thereby; but in the name of justice and truth let our critics confine themselves at least in a general way to facts.

* * *

The School is Life.

There are few teachers in Indiana who have not by this time read and pondered Dr. John Dewey's fine statement which Miss Scott, in her *Organic Education* uses as a sentiment to introduce Part I—"Education is not a preparation for life: it *is* life." Dr. Dewey means to say, of course, that education is not *merely* "a preparation." It surely is that, but it is much more; the period of formal education is life itself, and a very important part of life. As Professor Sandison says in the August EDUCATOR, "The endeavor should be made to have the life of the school as wide and deep as possible. It should also be an interesting life—a life that the child would not willingly give up, and one to which he in later years will often wish to return."

This thought of vitalizing and enriching the schoolday experience of the child is one which it seems most desirable to realize. It is the thought, chiefly, upon which Professor Paul H. Hanus of Harvard has based his study of "Educational Aims and Educational Values" in his book with that title. He has a great deal to say about the relative value of different subjects in an ideal course of study, but the great worth of the book, and the feature we wish to emphasize here is the author's clear conception of the purpose of education. In saying that his conception is clear we do not forget the diversity of opinion regarding educational needs and the best ways of realizing them. But it is hard to escape the conviction that one great cause of failure to get the best results in teaching is the lack of clear conceptions. Especially among younger teachers there is apt to exist only a vague and inadequate knowledge of the real scope and essence of education. It seems better to have a mistaken aim, provided it be honest, and to pursue it with vigor than to have no aim at all. The teacher who believes that education should seek utility alone, but who keeps setting that purpose before her pupils, trying to make every recitation and all study, contribute to the practical, is more likely to develop character in boys and girls than the one who passively keeps school and draws his pay. The conscientious teacher with a mistaken purpose will come sooner into clear vision than the one who drifts along at random without knowing whither or why. It is good to feel that we are not limited to these alternatives, and that in an increasing degree, teachers are working intelligently even at the beginning; and we must remember that education is life only to the extent that there is intelligent purpose in teaching.

Nothing else is so conducive to clearness of purpose as a careful formulating of that purpose in simple language. This is one of

the things that Professor Hanus does for us. The high purpose of education, as he conceives it, is *to prepare for complete living;* and by this he means to be as useful as possible and to be happy. By usefulness he means any activity which promotes the interests of mankind, "To be happy," he says, "one must enjoy both his work and his leisure." This is a clear statement, worthy of adoption as an educational creed.

The problem grows more complex, of course, as it develops. "Physical vigor being assumed, a man's usefulness and happiness depend on intellectual incentives and power; artistic incentives and power; constructive incentives and power as applied to material things; character, comprising ethical incentives and conduct." If this is less simple it is not less clear, and it gives the author a broad basis from which to estimate the relative value of different subjects in developing *incentives* and *power*. The latter is defined as the ability to bring about results. The first essential to a permanent incentive is interest; work without interest is drudgery, whatever the achievement may be. This is just as true in school as in later life. Participation in actual living should commence during school days. "The only real preparation for life's duties, opportunities and privileges is *participation in them*, so far as they can be rendered intelligible, interesting and accessible to children and youth of school age." This theory Professor Hanus would carry out logically in each of the three stages of education, so that the elementary school, the secondary school and the college should each in turn present the whole field of knowledge up to the limit of the child's capacity. Thus the education would be symmetrical as far as it proceeded, each stage carrying forward the work begun in that below. A few additional expressions may be quoted as indicating the author's views: "The extent and quality of a man's usefulness and happiness are determined (1) by the harmony of his interest and capacity with his life work, and (2) by the scope of his participation in the varied interests of life." "Wisely using the course of study as a means of discovering the pupil and leading him to self-revelation." "Prepare them to take their places in the world as participators in its affairs." "Man's highest and most permanent ideal is service."

These views seem exceedingly sane. Professor Hanus recognizes the value of refined pleasures, esthetic interests and ethical culture, but it is clear to him that the enjoyment of these depend largely upon the individual's capacity to meet his duties as a social being. "The serious purposes of life are, first, self support; or, when that is unnecessary, some worthy form of service; second, intelligent, active participation in human affairs." When these ideals are sought to be realized in school life, up to the pupil's capacity, it may be truly said that education is life.

* * *

Life is a School.

There are two senses in which it may be said that life is a school. There are the great lessons which we all learn from experience, which make character and determine destiny. Some of us learn these lessons earlier, some later. The one who profits most and soonest by experience is generally the wisest. These are lessons that come to us without study. The other sense in which life is a school is that which makes us life-long students. Many of the great characters in history and a much larger number whose names are on no scroll have found it a delight to love and cultivate books to the very end of a long life. "Commencement" for them has retained its true meaning. With it they have gone into the broader life, taking their habits of study with them. One of the most eminent examples of a busy man who found time to study was Gladstone. We should expect to find him studying history, law and social and economic questions. Those were related to his business as a statesman. But up to the closing years of his life we find him at work upon deep questions in Homer, and a critical student of the Bible. This must have been an instance of loving knowledge for its own sake, and for the pure joy of study. In that matchless poem, *Morituri Salutamus*, Longfellow, himself a life-long student, summons the class of Bowdoin graduates to continuous effort as students and cites some famous examples:

"Cato learned Greek at eighty; Sophocles
Wrote his grand Oedipus, and Simonides
Bore off the prize of verse from his compeers,
When each had numbered more than fourscore
years,
And Theophrastus at fourscore and ten,
Had but begun his Characters of Men.
Chaucer, at Woodstock with the nightingales,

At sixty wrote the Canterbury Tales;
Gœthe at Weimar, toiling to the last,
Completed Faust when eighty years were past.
These are indeed exceptions; but they show
How far the gulf-stream of our life may flow."

If there is a class of persons upon whom more than others there rests the necessity of continuous study it is the teaching class. The very character of the teacher's work demands it. The day has gone when the preparation of youth will last a teacher all his days. It is no longer thought wholesome for young minds to draw either knowledge or inspiration from stagnant pools. It is almost an axiom that the work of teaching tends to narrow the teacher to the small circle of learning within which his classes move. Whether the narrowing does happen or not depends, of course, upon the teacher. There is no doubt that the process of going each year or each term over the same rigidly outlined course does tend to restrict mental activity to these narrow bounds. Indeed this is almost sure to happen unless ambition or necessity or the true spirit of knowing possess the teacher as an impelling motive. In these days of newspapers, journals, magazines, low-priced books, institutes and teachers' meetings the teacher must be both dull and indolent who would not advance somewhat by the mere process of absorption; but this is a long way from the conscious, purposeful growth that we wish to advocate. It seems trite to say that teachers should always prepare lessons. That is well understood though perhaps not invariably followed; but it has not yet become established in practice that a teacher seek to know vastly more than actual teaching demands.

Teachers should study that they may gain knowledge. It may be said that after one's formal education is completed it is not of the highest importance what a teacher may take up for special study. Presuming that he will keep well informed upon the subjects he teaches he needs some other line of study which will broaden his view and help to counteract the tendency to narrowness already mentioned. It will be found, too, that any special study selected may be as remote as possible from the subjects taught and will yet contribute largely to one's teaching power. If a teacher is a student he will soon come to be known as such. This in itself will have a stimulating effect upon his pupils by the mere power of example; and his ability to inspire them to study will be increased. Again, no one but a student can enter into sympathy with students. During the recent institute season we heard a dear old man indulge in a scathing criticism of the course of study in history that has been prepared for the Indiana schools. He said the first part of it was away beyond the comprehension of the children for whom it was designed. As a matter of fact the children do the work readily and eagerly. It was not so when the good doctor was a boy, and he is measuring the outline by what he thinks he could have done when he was a boy. If he would take a class now and try the work with them he would find his error. He would get into sympathy with them and could gage their capacities with less danger of either over or under-estimation.

Speaking broadly, the great thing that comes to the teacher who is also a student is GROWTH. This is what someone has called the most divine thing in life. We have all known teachers who seem almost afraid to grow for fear they may earn more than they get. These are not the ones who become the great teachers. These are not the ones who are ready for the better places when unexpected changes occur. We do not look for them at the summer schools. More often it appears, after a time, that the schoolroom has been only a makeshift to which they have given only a divided service. We know them by their fruits. When the teacher ceases to be a student he ceases to grow; when he stops growing he begins to lose his intellectual life and hence his teaching power. Hear the words of Comenius spoken near the close of a long and useful life: "I thank God that I have all my life beeen a man of aspirations, . . . for the longing after good, however it springs up in the heart, is always a rill flowing from the fountain of all good, from God."

* * *

The Famous Dreyfus Case.

The most famous trial of modern times closed September 9 when the court martial sitting at Rennes, France, declared by a vote of five to two that Alfred Dreyfus was guilty of treason, as had been found in a previous trial. The judges admitted, however, that there were extenuating circumstances and made the new sentence imprisonment for ten years. The evidence was almost wholly circumstantial. That which was of a posi-

tive character has been shown to depend upon a series of forgeries, but the race hatred which is so intense on the continent of Europe seemed to demand the prisoner's conviction. These facts, involving, as they so vitally do, the administration of justice, and reflecting so unfavorably upon the republic of France, make it worth while to rehearse for our readers the principal features of the great case.

In 1894 it was discovered that somebody was engaged in telling secrets about the French army to certain foreign officials. This, of course, was treasonable. Either by mere circumstance or because the traitor wished to divert suspicion from himself, the charge was fastened upon Dreyfus. In October, 1894, his trial by secret court-martial began. December 20 of that year he was declared guilty. Asserting his innocence, he was publicly degraded from the army, and early in January, 1895, he was sentenced to perpetual exile. Devil's Island, off the coast of South America, was chosen as the place of imprisonment, and for over four years he has suffered all the horrors of solitary confinement, part of the time in chains.

At least five circumstances in the trial were unfavorable to Dreyfus:

1. He is a Jew. This means that at least 99 out of every hundred of his fellow officers were against him. There is an anti-semite organization whose purpose seems to be to intensify and extend this race hatred wherever possible. This society is especially strong in the army.

2. Dryefus is an Alsatian. It will be remembered that Alsace is one of the provinces which France lost during the Franco-Prussian war. Being a border province it has been thought that Dreyfus might be in closer sympathy with the Germans than with the French. Indeed, one of his three brothers has chosen to be German though Alfred and two brothers are French.

3. Alfred Dreyfus, as a military captain, was in the secret service of the French army, which seeks, among other things, to secure secret information from foreign countries through spies. All great nations have such a system, and its members need to be the most trusted men. It was thought easy for Dreyfus to furnish certain information to the Germans during his frequent visits to his Alsatian home.

4. The thing which fastened suspicion upon him was a memorandum, or *bordereau*, which had been given to Schwarzkoppen, an Alsatian, but a German military attache. It contained important information about French military affairs, and being found torn in very small pieces was taken by an Alsatian servant to the French war office. All experts but one declared this to be in the handwriting of Dreyfus.

5. In disposition Dreyfus was curious and prying, a trait which in itself made him unpopular, and which naturally increased suspicion when it was known that some one was disloyal.

The securing of a new trial that was asked for early this year, and has just closed, was also due to a variety of agencies.

1. Madame Dreyfus has been unremitting in her efforts to secure justice for her husband. As a woman of wealth she has thus been able to interest persons of influence. It must be remembered, however, that the army, almost to a man, was opposed to a reopening of the case. To try the prisoner again, and reverse the decision, would have been equivalent to self-condemnation for the army.

2. In May, 1896, there came to the hands of Lieutenant-Colonel Picquart a note to Schwarzkoppen written on the back of one of Major Esterhazy's visiting cards, expressing the writer's regret that he could not meet the German official. This is known in the trial as the *petit bleu*. Colonel Picquart noticed that it was in the same handwriting as the *bordereau*, and he had the manhood to say that he believed Esterhazy and not Dreyfus to be guilty. The army paid no attention to Picquart, and even tried to ignore the vice-president of the senate when the latter declared that he had proof of the innocence of Dreyfus.

3. In November, 1897, Mathieu Dreyfus, a brother of Alfred, openly charged Esterhazy with writing the *bordereau*. Esterhazy at once demanded a court-martial. This was given, and he was acquitted January 12, '98, though the trial is believed to have been a farce. The evidence that seemed unanswerable in this trial was a letter which Schwarzkoppen had written in 1896 to the Italian minister, and which mentioned Dreyfus in a friendly and compromising way. This letter was afterwards shown to have been forged for the purpose by Colonel Henry.

4. On the day after Esterhazy was acquit-

ted one of the French papers, the *Aurora*, printed an open letter from Zola the novelist to Francois Felix Faure, president of France, charging that Esterhazy had been acquitted "by order." Zola was tried, convicted, and took two appeals, but afterwards chose to go into voluntary banishment. During his trial Zola was fearless and unsparing in denouncing the race hatred which seems to lie at the bottom of the whole Dreyfus case.

September 26, '98, the French cabinet voted to re-open the case. A new trial by court-martial was ordered by the court of cassation, or court of appeals, June 3, '99, and this began at Rennes as has been stated, August 7. This order was considered as a hopeful indication for France since it made the military power obedient and subordinate to the civil power. The result of the trial, however, shows that the court was prejudiced against the prisoner, and that it has dared to disregard evidence in his favor.

From the following considerations a fair-minded person would have expected acquittal:

1. The attempt to assassinate Labori, junior counsel for Dreyfus, when it appeared that he was probing too closely to the truth looked like a desperate determination to uphold the decision of the first court-martial at all hazards.

2. Picard, one of the detectives in the first Dreyfus trial died mysteriously in his Paris lodgings.

3. Colonel Henry committed suicide in his cell shortly after his confession to Colonel Picquart that he had forged the letter of 1896 which was intended to save Esterhazy.

4. General Pellieux, and Minister-of-War Cavignac, who had made speeches at the Esterhazy trial declaring the letter of 1896 genuine, both resigned when it was found to be a forgery.

5. Esterhazy has fled to England and is said to have confessed that he wrote the *bordereau*. The report of confession has not been confirmed.

6. Just before his death by paralysis Colonel Sandherr, an anti-semite expressed fear that the Dreyfus case would be reopened.

7. Major du Paty de Clam who was first appointed to investigate the Dreyfus case, and General Mercier, minister of war in 1894 both appeared in a very bad light during the last trial. The latter became so confused under the close questioning of Labori that he was hooted by the audience after his testimony.

8. The leakage of information for which Dreyfus way first arrested continued up to 1897, two years after he had been sent to Devil's Island.

The wide interest in the case has rested not so much upon Dreyfus as an individual as upon the principles involved. It appears, as the *Review of Reviews* points out, that even if Dreyfus were guilty his accusers are guilty of a series of crimes in securing his condemnation. The trial was reopened because the conviction reflected upon the honor of France. If the last finding of the court-martial is to stand, we fear that the lost honor is not to any great extent recovered. Militarism is in the saddle and if Dreyfus goes into ten years confinement it will be *because he is a Jew.*

SOCIAL RELATIONS.

By GEORGE BICKNELL.

(Concluded from September.)

THE company believing that attractive surroundings are a great inducement to better work, have sought to improve the surroundings in every way possible. The walls of the buildings within and without are tinted colonial yellow, this shade being less hurtful to the eye. The buildings are lighted with electricity, are built of steel and glass, and are well ventilated with fans which cause an entire change of air every fifteen minutes. The smoke of the factory is consumed by the furnaces. The factory is said to be the cleanest, best lighted and best ventilated one in existence.

*"About three years ago a well-known Ohio manufacturer, on his trips to and from Dayton, was greatly impressed with the barn-like appearance and desolate air of the little homes lining the railroad as it approached Dayton and other cities. He said to himself that the fences and back porches would be improved by a few creeping vines and flowers. From the back-yard view of these homes his thoughts turned to the barrenness of his own factory, and he decided to try the effect of some flowers and vines. The first thing he did was to plant a big bed of flowers in the center of the factory lawn. Instinctively he felt that something was wrong. He knew that his ideas were right, but he lacked the knowledge of how to carry them out.

"He sent for John C. Olmstead, the man who had charge of the landscape gardening at the World's Fair in Chicago. The plan of beautifying a factory was an idea so foreign to the usual utilitarian purposes of such an establishment that it impressed him as very droll; but he finally allowed himself to be persuaded to undertake the commission, when he learned that his client had a serious purpose in all this. The first suggestion was the removal of the set-piece in the center of the lawn. Then he corrected the planting of one bed of flowers with eight or nine colors. He pointed out how by making little bays and inlets of shrubs and flowers along the sides of the lawn a pleasing effect might be secured. Next he suggested that the two stable sheds opposite the factory should be connected with an arch, the roof painted vermillion, the sides olive, and rapid-growing vines planted at each end, thus forming a harmony of color that would be restful to the eye.

"Mr. Olmstead's suggestions fell on fertile soil. Mr. Patterson not only decorated his factory grounds and buildings, but covered the telegraph poles and lamp posts with vines, so that the streets about the factory seemed like the approaches to a park. When he saw how beautiful all this looked from the factory, and when he reflected how simple were the principles of landscape gardening, he thought how fine a thing it would be to bring it to the homes of his factory people. He first secured material from Professor Bailey of Cornell; Mr. Simons of Chicago, sent him views from his estate, and Miss Helen Gould, being interested in his scheme, sent him photographs of the beautiful grounds at Lyndhurst, her Irvington home. These he made into lantern slides, so that he could show the people just what these superb effects meant when correctly applied.



A KINDERGARTEN CLASS AT WORK.

"He began this educational work in the factory Sunday-school, and when spring came he distributed 12,000 packages of seeds to the children. To stimulate the best efforts prizes were offered for the best ornamental planting about the home, and for the most artistic arrangement and training of vines on houses, verandas, buildings, fences and posts. Boys and girls under sixteen were invited to compete for the best-

* Quoted from *Current Literature*.

kept back-yards, whether lawns or planted in vegetables. To take charge of this work he engaged the services of a landscape gardener who could be consulted by any of the employes. The children planted the seeds and eagerly watched the rapid growth of the morning-glories and moon-flowers. Gradually the stiff lines of the fences disappeared under the luxuriant growth of vines. Then the mothers, seeing the pretty effect of the vines, began to train them over the porch and added window-boxes, making bowers of beauty out of the previous packing-box style of house. When the autumn came and the vines disappeared then they realized how very ugly the fences looked without any adornment. The training of the summer bore fruit, and when Mr. Patterson advised taking them down and replacing them by a wire fence, which was just about one-third cheaper and better adapted to the climbing vines, they were ready to do so. Some occupiers of adjoining houses did away with any kind of fence and planted, instead, a divisional line of flowers."

Much more might be said of the landscape gardening, but lack of space forbids. A tract of forty acres was recently divided into small gardens and given to the boys of the surrounding neighborhood, the boys are given what they raise on these spots and their work is directed by a trained gardener employed by the company, and thus "model farmers" as well as model registers are in course of preparation.



THE BOYS' GARDENS.

One important feature is left us to speak of and that is the kindergarten. The kindergarten is carried on in the N. C. R. House, and is well equipped with teachers and facilities for training the minds and hands of the children of the neighborhood.

About a year ago the factory announced that no application would be considered from anyone not a graduate of some high school; this announcement created a great deal of criticism. . . . but it is interesting to notice that there was immediately a marked increase in the attendance at the schools in Dayton, and that the general average in scholarship and at-

tendance was raised. When the mothers showed themselves indifferent about sending their children to the kindergarten the following notice was posted in the factory. *After 1915 no person will be employed by this company who has not in childhood attended a kindergarten.* Within a week the attendance in the kindergarten was more than doubled.

President Patterson says: "Everything day, the cost of production has lessened and the quality of the produce increased in direct response to everything we have done to actually add to the comfort, contentment and enlightenment of our employes. Many of the unusual features of our life here either cost nothing at all or are of very little expense, since they have sprung naturally from what we have inaugurated, and owe their development to the intelligence of our



A VIEW FROM A FACTORY WINDOW ACROSS SOUTH PARK.

that makes my employe a better man, gives me, through him, a better machine. It is never a question, therefore, whether or not to spend money for his benefit, but only how it can be spent to increase his knowledge, his happiness, or his health. Money spent in any business so as actually to produce such results will bring as quick and sure returns as that invested in any other of the more customary ways of developing a business.

"Everything which this company has done that has involved expense has immediately resulted in an apparent gain to the business. From the first move to the present people rather than to the coffers of the company.

"To abandon anything which makes the employe a better man is not the way to save a business, but is an additional menace to it."

At one of their yearly meetings given for the benefit of the employees on July 9, 1899, at Dayton, where over 5,000 persons were fed at the company's expense, where for two days and two nights a force was at work preparing twenty thousand sandwiches and eighteen hundred loaves of bread were cut up in one pile, and where 164 gallons of ice cream and "barrels upon barrels" of

coffee was served, the president made these remarks: "The kindergarten teaches accuracy of eye, hand and mind. It teaches truthfulness. It teaches that a straight line is the shortest distance between two points; that two parallel lines never meet. It implants in these young minds the foundation principles of designing and construction and mechanics. It teaches them to know the actual shapes and forms and characteristics of the things of which otherwise they would only learn the names.

"These principles and this education are the foundation of mechanics and art, and if you cannot see the connection between the kindergarten and the factory ask our tool room men. They can tell you. By this wonderful system of kindergarten teaching these little people will grow up intelligent, capable, practical boys and girls, with more real efficiency of hands and brain while yet in their teens than the average young man or woman of twenty-five or thirty years would acquire without this teaching.

"Do you wonder that after the year 1915 we will not consider applications for employment from people who have not been trained in the kindergarten?

"We used to think there was only one kind of capital—one kind of wealth—and that was money or its equivalent; but in these times we realize that education is capital, just as truly as money is; and a man can be miserly with his education or his experience just as truly as he can with his money.

"A man who possesses the wealth of education or practical wisdom and does not use it for the benefit of others is just as miserly as the man who hoards his money and neglects to put it into use.

"Every grown person has capital of some kind; if it is not money, it is the practical wisdom which springs from education or experience. You all have some of this wealth, and we do not want you to be miserly with it. We want you to use it for the good of others.

"The great trouble with most men who possess education or wisdom is that they do not know when or how to use it to advantage. They either lack the opportunity or do not understand the right methods of communicating their knowledge to others. Now that is what I want to speak to you about to-night.

"Now here is the greatest sermon in the world. These three sayings, 'Do Justice, love Mercy, walk humbly,' are my text, and I want to preach that sermon to all.



A COOKING CLASS OF YOUNG WOMEN EMPLOYES.

"To the employer I want to say: Do justice to your people. You know what justice is; they know what it is. Be just; be fair; be honest with them.

"And give something more than mere justice. Let it be tempered with mercy, and let these feelings be mutual. Let the sense of justice and mercy work both ways. Oh, my people, be just and merciful to each other, to the foreman with whom you work, and to the company. While it is the duty of every company to show to its people that it is not a corporation without a soul, so it is fair for the people to show, as our people do, that they too have a soul, a spirit which responds to considerate treatment.

"And, above all, walk humbly. That is the greatest sermon of all, and it applies equally to all.

"You companies, you manufacturers, you ministers, you business men, whatever your position or authority be, walk humbly. Don't think you know it all. Be willing to receive suggestions from the humblest person in your employ. That is the best advice I can give. If you want to be successful in this world, walk humbly."

SULLIVAN, IND.

THE KINDERGARTEN AND THE CHILD.

By ELIZABETH HARRISON.

(Concluded from September.)

A SECOND point on which we would all agree is that the child must be trained into *skill of expression*. First, his own body should become an easily managed and unconsciously used instrument; hand, eye, ear, legs, arms and torso all have the power of silently expressing much without any help from words. One of the great factors of the kindergarten training is this skill in the easy use of these tools of the body. I will not stop longer to dwell upon how they are trained, but in passing would recommend the reading of the chapter on the "Human Hand" in Mr. Denton J. Snider's *Commentary on Froebel's Mother-Play*. The sense games, often played with rollicking fun and eager interest are at the same time sharpening and enlarging the power of other all-important instruments. Music and song and well modulated tones of voice train vocal organs until the body, both inner and outer, becomes what it should be, the willing and obedient servant of the spirit that dwells within it.

MATERIALS OF EXPRESSION.

But skill is required in the mastering of the outside world as well as of the body. Simple materials which can be easily handled and transformed are the best to place within the reach of the child, and also the best for showing him how to handle materials. Sand, clay and that recent invention of an equal mixture of salt and flour are, as we all know, invaluable in the first steps of constructive work. As the body is the chief instrument in the *make-believe* stage of the imagination and almost any object, oftentimes none at all, is sufficient for that form of externalization of inner impressions, so the simple, primitive materials of nature are the best beginnings for *constructive* imagination which is the second step in the development of that all important faculty of mind.

Later on, and, in my judgment, after the kindergarten stage, come wood, hammer, tacks, etc., for this reason, that the heavier and less flexible material resists the child's attempt to transform it and consequently discourages his efforts.

I visited a kindergarten not long ago where the kindergarten director, with great pride and pleasure, showed me several shelves filled with "constructive work" done by her children. These articles consisted of market carts, street rollers, wooden chairs, miniature tables, dolls' cradles, and various other crude toys. I had that morning seen one of her assistants take a long stick and a bunch of excelsior shavings and, laying the latter against the former, say to the children at her table, "Now I want you to see just how I make this little broom for sweeping the streets." With this she picked up some fine hair wire, wound it slowly around the stick, binding the excelsior to the same; folding the excelsior over, she again bound the upper end of it down, thus making a toy broom. "There," she said when she had finished it, "now did you watch how I did that? Would not each one of you like to make a broom so that we can all clean the streets this morning?" The children gladly responded, and a stick and a bunch of excelsior and a piece of wire were portioned out to each, and most of them went to work with painstaking carefulness to reproduce the toy which she had made. Having this in mind I said to the director, "These are interesting in the way of constructive toys but are not all these made in the same manner in which

I saw the little broom made just now? Does not the teacher show the child how to put the parts together?" "Oh, yes," she replied, "she usually has to help them as the material is a little difficult for them to handle alone until they have seen it handled by her, but we always have them do their own constructing." "May I see some of their *transformations* from a given pattern or form?" She hesitated a moment, looked around and said, "I fear I have none of them here. They usually make any changes or inventions with paper; *it is so much more easily handled.* These they generally take home, or if they stay here they are so easily destroyed that we soon have to throw them away." Thus, unconsciously, she was acknowledging Froebel's wisdom in furnishing easily modified material for the child's creative work.

CREATION SHOULD FOLLOW CONSTRUCTION.

Constructive power is good as far as it goes, but *creative* power is a higher thing and must not be sacrificed for the lower; therefore I cannot but feel that the paper and pasteboard of the kindergarten are not replaced by wood, hammer and nails, though I frankly admit that they may be and oftentimes are abused when used for unchildlike work.

To me the insight of Froebel is nowhere more evident than in his selection of geometric forms and gifts, or playthings, for the child during the creative period of his growth. Geometric construction underlies every form that the human hand can make as well as every form that nature has put forth. In one of our kindergartens not long ago the teacher and class together made a *hexagonal* prism out of sticks and bits of clay, using it afterwards as a parlor table. The next morning one bright little fellow of five triumphantly brought in a square prism, a *triangular* prism and an *octagonal* prism which he had constructed unaided at home. He had learned the principle of construction which underlies all prismatic forms, and therefore was independent and could make any form approaching a prism which he desired. The variation in size makes the child quickly and readily familiar with the one geometric form, emphasized thus by repetition so that no time is lost in confusion of form and a strong impression is easily and quickly made. This followed up by the construction in either clay, pasteboard or cardboard of the same form at once places the child in a *conscious* mastery of spherical and cylindrical, cubical and conical objects, be they market carts, street rollers, babies' cradles or what not. More than that, the gifts of the kindergarten are so simple in form and of such firm structure that they can easily be arranged and rearranged, adjusted and re-adjusted to the child's changing ideas. The same set of blocks can one minute be the mother and father and little children walking to the station; the next minute the choo-choo cars which take them to the country; then suddenly transformed into the cows seen by the road-side, the church steeple in the distance or any other new object which the command of the young mind bids the hands bring forth, whereas the laboriously constructed toy must remain that one thing and nothing more. This permanent form of the toy is perfectly legitimate *after* the child has gained constructive power enough to turn and quickly make his next design, but during the kindergarten period my experience has shown that a quicker transformation than that made of wood and nails or tin and pinchers is needed.

So we have in the power to express, first, the free, easy, harmonious use of body through training of senses and muscles; and, secondary, the mastery, through play, of the elementary materials and forms of the world. Much more could be said upon this subject but time is passing.

VALUE OF IDEALS.

Let us now turn to the third point on which I think we will, most of us, agree. High ideals, that is, as high as the child can comprehend, are to be encouraged and emphasized; not mere activity, but uplifting activity. In his definition of his idea of education, Frederick Froebel has said, "the whole of nature up to the appearance of man, the whole of history from the beginning of the human race, through all the past up to the present moment and then still onward to the final consummation, stands before my soul as a perfectly accurate representation of true education." Is not this a broad enough definition to cover not only the study of "*racial remains*" but also of "*human ideals?*" Are we not to look *forward* as well as *backward* in the education of the child? Is it not as essential to understand his *possibilities* and what he may achieve and become,

as to understand his *genesis* and out of what he may have grown? Froebel was a student of child life at first-hand; not through compilations and observations of others. For forty-nine years he was an earnest, thoughtful, conscientious student and, keenly alive to the importance of the minutest manifestation, he certainly cannot be said to be a mere dreamer or theorist, as I do not know of any one of us who has had a longer or more thorough record of *personal* study of child-life. Aside from this, his letters show how eagerly he sought the added experience of others.

The result of all this earnest observation and thought was that he felt that the highest thing which a parent or teacher could give to the child was, through the raising of his *ideals* of his own power and his relationship to his fellow beings, to slowly prepare him for his consciousness of *sonship to God*. Nor can I see that this is in any way undue development of the child's immature stage of growth. Are not all children gaining ideals of family relationship and family life? Is it possible to prevent them from forming opinions as to how mothers act toward their children and children toward their mothers; husbands toward their wives; brothers and sisters toward each other? Are they not living in the midst of this thing, daily, aye, even hourly impressed by it? Is it therefore too soon to begin to train these impressions toward what is high and noble rather than to leave them with the confused, haphazard and oftentimes debased standards? Has not the race *loved* and *served* as well as *fought* and *hated?* Do we not see in the child's instinctive play with the doll that racial instincts of family life are active, and as we would teach a boy to throw a ball correctly, to climb without hazard to life or limb, may we not also teach him through play and song and story of the right kind of fatherhood and motherhood? This phase of the work I know is often abused.

THE FALSE AND THE TRUE.

I remember being in a kindergarten one morning when, after the morning songs and greetings were over, the kindergartner in a hollow, artificial tone said, "Well, now, let's talk a little while about somebody who is not here. Whom did you leave at home this morning?" "Aw, the loving mother," drawled out one child in a tone of supreme scorn and contempt. One or two others imitated him and in derision drawled out also, "The loving mother," thus showing what deep violation had been given to that highest and holiest emotion of the young child's nature. On the other hand, the most beautiful expression of countenance that I have *ever seen*, was on the face of a little five-year-old girl while playing the part of the mother-bird as she hovered over the two little tots crouching down at her side who were playing the part of the baby birds. Could an artist have caught the Madonna-like expression of that child's face and placed it upon canvas he would have made himself immortal. Can such joy and consecration be exhibited upon a face except that like emotions are stirred within the heart? Again, I have seen in one of the poorer districts of our city a five-year-old girl insist upon it that she could march as well with her little year-old baby brother astride of one hip as she could without him. When the kindergartner protested that he was heavy she answered, "Oh, no, he isn't. I love him so." Was not the mother instinct astir within her? Many like visions of past experiences with children come before me at this moment. I *know* whereof I speak when I say the *presentiment* of the future relationships of life stir deeply and vividly within the child when the occasion suited for them calls them forth. Is it not as legitimate to make occasion for them as to make occasion for the examination of street-cleaning?

TEACHERS MAY CREATE IDEALS.

In speaking of high ideals, I would again earnestly call your attention to the fact that all children live in the midst of the world of labor and trade activity; that there is no child of five who has not passed through the experience of seeing the market man, the coal dealer, the car conductor, serve the community. Shall these impressions be left hazy and oftentimes false or can they be made clear, and labor and capital, service and wages, be placed upon the right basis? Where this has been attempted, many such real transformations as the following have been recorded. In one of our kindergartens, in a poor Italian district, the term "farmer" was used as a title of contempt, odious enough to draw forth blows from the stronger boys and tears from the weaker. "You old farmer, you!" was one of the chief taunts which one boy could heap upon

another. Little by little the kindergartner led the children to realize that their bodily comfort and strength came from the food they ate and that most of this food was produced in the country, and after duly impressing them with the wonderful mystery of growth in the vegetable world, she introduced pictures of men plowing the field, reaping the grain, stacking the hay and other agricultural pursuits, and not until they had looked at, talked about and admired its activities did she introduce the term "farmer!" Before a month had passed half the boys in her kindergarten had avowed their intention to some day become farmers, and once, when a load of hay was passing by, she called the children to the window to see it and some of them jumped for joy at having seen a *real farmer*.

An intimate friend of mine was going home one afternoon in the street car with her little niece. A laundress entered the car with a large bundle of clothes in her arms. My friend whispered to the little niece and said, "You had better get up, Annette, and let that woman have your seat. You can stand and she has a heavy bundle." The child glanced at the woman and then in a tone of scorn said, "'deed I won't she is nothing but an old washerwoman." The kindergartner made no reply but after they reached home that night, at the supper table she said, "What a nice, fresh table cloth we have on the table to-night." The child, who was a fastidious little creature, passed her hand gently over the smooth damask and replied, "Yes." "After all," said the kindergartner, "we would have to eat off dirty table cloths if there were no washwomen to wash them for us." Next morning as the snow-white linen apron of the little girl was being buttoned up, this same wise aunt remarked, "How pretty and clean your apron is this morning, Annette." "Yes," said the child, "I love clean aprons." "Yet, after all," added the aunt, "you could not have clean aprons if there was not somebody to wash them, could you, and we could not have clean towels on which to wipe our faces, or clean sheets and pillow cases." The child made no remark but the following day as they walked home they saw across the street a laundress with a basket of clothes. "Dear me, aunty," said the child; "just look at what a big basket that nice washerlady has to carry. What a pity it is she hasn't a buggy to ride in." Thus a few judicious remarks had changed the "old washerwoman" into a "nice washlady." Could this have been done if the child had not had within her some consciousness, at least, of the idea of the relative values of service and served?

I will not speak here upon that deepest of all subjects, the training of the little child in reverence toward a Divine Being greater than self, *from the very beginning of his conscious existence.* If the child's right arm has been bound to his body so that he cannot use it until he is seven or eight years of age, it can never attain unto the possibilities which it would have acquired if used from the beginning of the child's activities. To me the religious training of the child from the beginning is as necessary as the bodily training, for all increased reverence is increased capacity for religion and all increased religion (by that I do not mean theology nor ceremony, but vital faith in the existence of the Divine without and the Divine within) is the measure of man's greatness, and the end and aim of all education is to make each individual child as great a man or as great a woman as that child is capable of becoming.

CHICAGO KINDERGARTEN COLLEGE.

TALKS ON THE STUDY OF LITERATURE.—I.

By EDWIN A. GREENLAW, A. M.

ALL human life aims at self-expression. This may be voluntary or involuntary, may be the essential characteristic of one's life, or only the incidental accompaniment of activity; but there is no intelligent life without expression. The artist expresses himself through his paintings; the sculptor through his statuary; the business man in his mercantile establishment. Mr. Wanamaker's store in Philadelphia is very different from Mr. Field's store in Chicago, or from that of Mr. Barr in St. Louis. Each

is individual, and each is the outward expression of the life of its owner. Again, the clear, vigorous sentences found in the orations of Samuel Adams show the dogmatic character of the man; but Richard Henry Lee, speaking upon the same subjects, uses the long, flowing sentences which distinguish the classical scholar. The terse, crisp sentences of Emerson bespeak a man who is an acute, vigorous thinker; while the meditative, romantic, unpractical nature of Irving shines out on every page of the *Sketch Book* and the *Alhambra*. Alexander embodied his life in the mighty empire he established; Dante in his immortal epic; Livingston in his search for the sources of the Nile; Nero in the shocking barbarities he committed while emperor of Rome.

* * *

Even the humblest individual expresses his life in his business or professional work. We are continually receiving impressions, and these impressions, re-acting upon us, form character. The character of the man who gives his whole life to physical labor while neglecting the development of his higher moral and intellectual nature, must of necessity be stunted and unsymmetrical. The educated farmer succeeds where his ignorant neighbor fails, because he lives a more complete life, and therefore can better express himself. Homes bare of ornament or comfort, in which no books are found and where men and women and children live like animals, are but the outward expression of the barren, unthinking character of those who live in them. In other words, whether one speaks, or walks, or transacts business, or writes books, he expresses the essential character of his life. We can judge of a man's character by the company he keeps; not less certainly may it be judged by the way in which he expresses his life in his daily acts and by his surroundings.

* * *

In the study of literature we are concerned with a peculiar kind of life-expression. The office building in a great city expresses the thought of its builder; a church or a public hall expresses the thought of its architect. Then, too, we have Gothic architecture and the peculiar expression of the Gothic mind; and we have Greek and Roman and Egyptian architecture, each of a different type. He is dull, indeed, to whom the giant locomotive, instinct with all but human intelligence, does not appeal as a wonderful expression of man's thought. But the building and the locomotive exist primarily for another purpose than that of self-expression. Not so with sculpture, or painting, or music, or literature, which are ends in themselves, and which have more than merely practical value. Of literature it has been said that "it is the record of the best and happiest moments of the happiest and best minds." It is the highest form of self-expression, and it has value in proportion as it ascends above the plane of the commonplace and trivial into that diviner ether which is the realm of true art.

* * *

It is apparent, then, that literature is the written expression of personality. It has its rise in the fact that one of the most striking characteristics of human nature is the impulse to record and preserve whatever is best worthy of recording and preservation. We would not call a dry-goods catalogue literature; nor a railway timetable, nor a hotel bill-of-fare. That only is literature which possesses a more or less general human interest, or which appeals to that which is permanent in human nature. The reason why the dramas of Shakespeare are read with such perennial interest, while those written by his contemporaries are rarely referred to, is that Shakespeare touches the permanent elements of character, instead of reflecting merely the ephemeral life of the day.

* * *

Lastly, literature bears an intimate relation to human life. We are interested in nothing so much as in human nature. The politician who scans the papers; the gossip retailing bits of information about her neighbors; the novel-reader greedily devouring all the fiction she can find; all these illustrate the interest which men take in men. Again, the reader must re-experience the author's life as it is expressed in the literary work, and thus what he reads bears an intimate relation to his own life. They who think great thoughts will be great in action, and high literature, by causing men to think the best thoughts, exerts a powerful influence upon character.

Thought makes character. The thinker carries force, domination, weight written

upon his forehead. And he to whom the mighty masters of thought are friends, who is acquainted with the very best of their lives, as expressed in their books, is immeasurably above the one who uses his power to read only for glancing over the columns of the daily paper, or for idling away an hour with a sensational story.

* * *

But character is developed, never through sloth or in idleness, but in struggle. The man who has been reared in luxury and to whom honest toil is a stranger, lacks fibre. The rebuffs that turn rough earth's smoothness give strength to the soul. We gain nothing truly valuable without effort, and this law holds good not less in the world of art and letters than in the material world. There is a vast difference between reading "Macbeth" merely to get the story, and studying it until the masterpiece, with its tremendous moral lessons, becomes a part of one's life. Strong, manly men have nothing but contempt for the pimp who thinks that the world owes him a living, and who searches for some easy place where the duties are light and the pay liberal, for such a person lacks character, and shirks his lesson in the great school of life. So is it with the polite dawdler with literature, the person who aspires to be called literary, but who can do nothing more than lounge in a hammock with a fashionable novel in hand. To get value from the works of great writers one must put forth the same effort he would expect to use in the search for gold. Pearls of thought are no more to be appropriated without effort than are the jewels themselves to be picked up along the highway during a careless morning walk. It follows, therefore, that those books are best which challenge the student to work. The dictum "in the sweat of thy face shalt thou eat bread" is as applicable to him who would think the thoughts of a master-thinker after him as to the man who searches for means of physical existence.

* * *

By study of literature, then, we mean getting into sympathy with the author and living over again his life, so far as it is expressed in his work. To come into communion with the stimulating intellect of Emerson, or the nature-loving soul of Wordsworth, or the strenuous life of Carlyle cannot fail of developing character, and of thus enabling one to express his life more completely than before.

NORTHWESTERN UNIVERSITY.

METEORIC SHOWERS.

By JOHN A. MILLER.

SINCE meteoric showers probably owe their origin to comets, it will be helpful to preface what I have to say of meteors by some explanation of the structure and peculiarities of comets.

CZAR OF THE SOLAR SYSTEM.

Every year there visit the solar system from three to seven bodies which are unlike the planets or any other of its members. These bodies remain visible for a few weeks, sometimes for a few months, while traveling in a path around the sun, and then vanish. They have some properties in common: they are extremely rare; usually one point seems denser than the rest, and this point is called the nucleus. This nucleus is surrounded by envelopes and jets of light, which give these bodies their name,—hairy star or comet. All of the brighter comets, and many of the fainter ones, have a tail of light extending always away from the sun. It is commonly believed that these comets consist, not, as once supposed, of heated gases, but of solid particles, stones it may be, each surrounded by an envelope of gas. These stones are always small (not exceeding perhaps a hundred feet in diameter, and in many cases not a thousandth of an inch), always widely separated, and traveling in groups, chiefly because of their attraction for each other. Nor do they form a stable system; no overmastering power is among them. The solar system, for example, is composed of a great number of bodies, nearly half a thousand, and the system is an absolute monarchy with the sun

as the czar. With the possible exception of rotation, he controls absolutely every motion of the bodies composing it except the satellites. He has placed the planets at a certain distance from him and holds them there—not the combined pull of all the planets against his mighty power can disturb the motion of its smallest body to an extent appreciable to the naked eye. He has said to Mercury and to Venus: "Thou shalt not rotate." So these planets move always around him with the same half always exposed to his blistering rays and the glare of his light, and the other half inexpressibly cold and bleak and plunged in eternal darkness. He not only controls the movements of his children, but to an extent, that of the moon's—his children's children.

THE SUN'S INFLUENCE OVER COMETS.

There is no such predominating power in the collection of bodies forming a comet. These bodies form, rather, a loose confederation of states, ready to be separated by the internal commotion caused by any disturbing influences. Such an influence is the sun. His control of these visitors to his system, while perhaps less absolute than over his own family, is more whimsical. He attracts all the bodies forming the comet with equal force, but repels them, it seems, with forces varying according to the *constitution* of the bodies; for example, a body composed largely of hydrogen is driven away with enormous velocity, while one composed largely of iron is compelled to stay rather closely to the comet body.

Every comet travels around the sun in a path whose chief determining factor is its velocity and this, in turn, is determined largely by the attraction of the sun. Since all the bodies forming the comet are not repelled by the same force, they are acted on by forces of different intensity and so they will take slightly different paths; hence the comet tends to break up or disintegrate as it passes around the sun. There is abundant observational support of this theory of comet disintegration. Professor Hussey of Lick observatory, photographed comet Rordaime of 1893 every hour for a certain time, during several successive nights. By means of these photographs, certain condensations in the tail were traced as they moved away from the head with a velocity of four millions of miles a day. The change in the velocity of the bodies forming these condensations was such that not only were they forever separated from the head of the comet, but they were driven off into space upon such a path that they will never return to the solar system. Swift's comet, photographed by Barnard, showed similar phenomena, and it can be shown mathematically that the bodies forming the tail of a comet at any time were a few moments before a part of its head, and a few minutes afterward will declare their independence of it, forsake the path they were wont to travel, and leaving the head in its old path, abandon it forever.

DISINTEGRATION.

The change in the velocity of bodies that remain to form the head of the comet is small and therefore not readily detected. And yet this tendency of the comet to go to pieces when near the sun was curiously illustrated by a comet discovered in 1826 by an Austrian officer named Biela. He—and at the same time, but independently, a French astronomer—computed its path and found that it went completely around the sun in a period of time somewhere between six and seven years. At the return of the comet in November, 1845, it did what, with one possible exception, no other comet has been seen to do. By the middle of December the head of the comet, which like that of other comets, was round at first, assumed a pear shape, and within two weeks an astronomer at New Haven discovered that it had split in two. These parts moved side by side only about 150,000 miles apart. A certain sympathy seemed to exist between them, for, sometimes one was the brighter, sometimes the other, but invariably when one brightened the other dimmed. They passed out of sight and in August, 1852, returned, still moving side by side, but separated now a million and a half of miles. They vanished soon after and have never since been seen though they should have returned several times since 1852 and have been watched for eagerly and with the most powerful telescopes.

Biela's comet is not the only periodic one which has entirely disappeared. Brorson's comet was discovered in 1846, and came into view every five and a half years thereafter until 1890, when it failed to make its accustomed journey around the sun. It was due again in 1896, but again failed to keep its appointment.

It was not observed to disintegrate as Biela's had done, but it always looked travel-stained and forlorn. It was always devoid of streamers, envelopes, tail, and other paraphernalia of a robust and well-regulated comet.

THE GREAT COMET OF 1882.

Nor is Biela's comet the only one which has shown signs of breaking up. There are probably

many persons who remember that magnificent comet of 1882. It was a splendid object, so bright that it could be seen even in daylight, by simply shading the eye from the sun. Its tail at one time was more than 100,000,000 miles long, greater than the distance from the earth to the sun.

Its visit left us wiser, for among other things it gave clear signs of breaking up into parts. At first the nucleus, or head of the comet, had only one center. Early in October the comet was found to have two centers, ten days later three, and by the last of January, 1883, it had *five* centers in a line "like pearls on a string." In addition to this evidence of disintegration, three different observers, among them Professor Barnard, now at the Yerkes observatory, found in the trail of the comet various nebulous masses which it had apparently cast off in its passage through space.

COMET BROOKS AND ITS COMPANIONS.

On July 7th, 1889, Mr. W. R. Brooks of Geneva N. Y. discovered a comet. It was so small that for some time after its discovery it attracted very little attention. Interest in it was suddenly awakened, however, when Professor E. E. Barnard[1], then of Lick observatory, announced that on August 1st he had discovered two objects, and August 4th, two others, which were near the comet, and afterwards proved to be companions of it. The comet had, in the meantime, come very near the giant planet, Jupiter; nearer in fact than any other comet had ever been known to be. It was, indeed, so near, that subject to his mighty attraction, it made nearly two-thirds of a revolution around Jupiter instead of pursuing its wonted path. Now, when the comet was discovered, it had no companions; after being in proximity to Jupiter it had four, each of which were a miniature of the parent comet. The inference is that Jupiter had disrupted the comet. This comet returned in 1896, but its companions were not seen.

In addition to the evidence already given, Professor Kirkwood collected from the Chinese annals data to show that six or eight other comets had probably divided like Biela's, into two or more parts.

METEORIC SHOWERS.

With this much in explanation of comets, and their tendency to disintegrate, let us now turn to the subject of meteor showers. The first notable meteor shower which was carefully observed was that of November 13th, 1833. Dr. Kirkwood of Indiana University describes this as follows: "Soon after midnight the number of meteors became so extraordinary as to attract the attention of all who happened to be in the open air. From two to six o'clock the numbers were so great as to defy all efforts at counting them; while their brilliancy was such that persons sleeping in rooms with uncurtained windows were aroused by their light. The meteors varied in apparent magnitude, from the smallest visible points to fireballs equalling the moon in diameter. Occasionally one of the larger class would separate into several parts, and in some instances a luminous train remained visible for three or four minutes. No sound whatever accompanied the display." The shower continued until daylight.

The results of observations of this shower, made in all parts of the United States, and by officers of ships at sea, were collected by Olmstead of Yale and Twining of West Point. They showed that the meteors originated in a point some thousands of miles above the earth, and that they came toward the earth in nearly parallel straight lines. They formulated the following theory accounting for the phenomena which is the one universally accepted, and which grows stronger with every observation.

THE THEORY.

They expressed the belief that there are moving in space great numbers of small bodies traveling nearly the same path and with nearly the same velocity; this collection of bodies they called a meteoric swarm; whenever the earth cuts through one of these swarms the little bodies composing it, attracted by the earth fall towards it with such velocity that the friction of the bodies with our atmosphere heats them to incandescence and thus makes them visible. These little bodies they called meteors. They said, further, that the shower of 1833 was in all probability the result of the earth plowing through such a swarm and that the point from which the meteors came was the intersection of their orbit with that of the earth.

Although astronomers accepted the existence of meteoric swarms as a working hypothesis, they had no definite speculations as to what the streams were, or how they came there. Professor Newton of Yale, searched old records and found that there had been a meteoric shower on or near November 13th every thirty-three years since 902 A. D. He reasoned, therefore, that the meteoric stream traveled in a *closed path*, and Profesor Adams of Cambridge, England, showed

[1] Publications of the Astronomical Society of the Pacific Vol. 1, page 72.

that the stream completed a circuit every thirty-three and a fourth years, from which Professor Newton and others predicted a great meteoric shower on November 13th, 1866. The prediction was fulfilled. The shower was somewhat disappointing to American observers, but there was a brilliant display in Europe. Professor Grant, then director of the observatory of Glasgow, describes this shower as follows:

THE SHOWER OF 1866.

"Great numbers of beautiful meteors were now (1 A. M.) seen traversing every region of the heavens, with a general movement directed from east to west. Multitudes of them were equal in brightness to stars of the first magnitude; many of them were equal to Jupiter when in opposition, while some of them rivaled Venus when at her greatest brilliancy. Their prevailing color was white while others had a bluish tinge. They traveled the heavens with great apparent velocity. In many cases they described arcs of 50°, 60°, 70°, although the interval of visibility, did not, in general, exceed three seconds of time. In almost every instance the meteor, as it pursued its westward course, spun out a beautiful train of light. The color of this train was invariably a bright emerald green. In general, the disappearance of the meteor preceded that of the train. The observations were not long continued before it became evident that the meteors were directed from a definite region of the heavens situated in the constellation Leo, which was seen in the east ascending above the horizon."

The numbers of meteors observed by different persons differ somewhat, but the reports were based upon actual counts. All agree that the meteors were more numerous at about 1 A. M. than at any other time in the evening. At that time Professor Symth, astronomer royal of Scotland, reports that 4,626 were observed in one hour, and 8,312 in eight hours. Professor Grant of Glasgow reports a maximum of fifty-seven a minute.

It is evident that the earth is at the same point of its path on the same day of the same month each year, and hence, if the meteoric matter is equally distributed, around the entire orbit, we should have a meteoric shower of about equal splendor on the same date each year. But the showers of November 13th are not equally splendid, and therefore, the meteoric matter for these showers is not equally distributed around the entire orbit.

There was another shower on November 13th and 14th, 1867, smaller than that of the preceding year, yet Dr. Kirkwood and his students observed it at Bloomington, and though the night was so cloudy that they could hardly see Jupiter, then the brightest star, they counted more than 350 meteors. On November, 13th, 1868 and 1869, the showers, while smaller than that of 1867, were larger than the average annual shower. The main body of meteors, therefore, was three years in passing and was estimated to be more than 500,000,000 miles long. The occurrence of annual showers shows that the meteoric matter is distributed all around its orbit, and the occurrence of the great showers show that this matter is not evenly distributed.

There are always some meteors on November 12th; therefore, the earth is more than twenty-four hours cutting through the stream, and therefore the stream is at least 1,600,000 miles wide. These meteors of November 13–16 are called Leonids since they come from one of the stars in the constellation Leo.

THE COMING SHOWER.

The next great shower of Leonids, it is predicted, will occur on the mornings of November 14 to 16, 1899, though if the theory which has just been presented is the true one, we cannot expect so brilliant a display as that of either 1833 or 1866. For, as the stream passes around the sun it is disintegrated more and more, and hence the meteors are more scattered. Then, too, on those dates the moon will be more than half full, and hundreds of the smaller meteors will not be seen because of her greater brilliancy; and yet, astronomers confidently expect them to fall by thousands. Everything gives promise of the fulfillment of the prediction. On November 13th, 1897, the earth cut through the advancing stream, and on that night, Professor W. H. Pickering of Harvard College observatory, and his assistants, observed ninety-one meteors, the most of which were Leonids.

On November 13th of last year the earth again entered the stream at a point where the bodies were not so scattered, and hence they fell in greater numbers. As early as eleven o'clock in the evening an observer under a clear sky would have noticed the unusual number of shooting stars. The number falling each hour increased until three o'clock of the morning of the 14th, when sixty-one were seen by observers at the Harvard College observatory in half an hour. In all about 800 meteors fell on the morning of the 14th, and 300 on the morning of the 15th.[2]

[2] An account of the above may be found in any astronomical Journal of December of last year. An account of the shower as seen at Indiana University observatory may be seen in the February number of THE INLAND EDUCATOR.

One meteor belonging to this shower was seen as late as November 19th. The meteors traversed the sky in all directions with great velocity, each leaving a train of light in its path. The color of the train was generally blue or emerald green, while the head of the meteor was yellowish red, suggesting the color of an iron passing from a white-hot to a red-hot temperature.

The train appeared to be an area, shaped like a rhombus, whose longest diagonal was from eight to twenty times that of the shortest. When the meteor disappeared the broad part of the train vanished last. As has been said, this year there should be a "rain of fire," and the showers will be repeated on November 14th of each year with constantly diminishing intensity.

The meteors of this shower always move swiftly and from a point in the direction of the star known as Zeta Leonis, in the constellation Leo; they have been described as invariably leaving a greenish or bluish trail, but Pickering says that, judging from the shower of 1897, the belief is not well founded.

Not a sound has ever accompanied a Leonid display, and so far as is known no fragment, not even ashes, has ever reached the surface of the earth. The shower, as seen here, begins at 10:30 and lasts until morning.

From the data gathered at the Leonid shower of 1866, Leverrier calculated the exact orbit of this stream of meteors, and published his results. Within a few weeks, and with no thought of connection, Oppolzer published the orbit of Tempel's comet, also discovered in 1866. A comparison showed that the meteors and Tempel's comet were traveling in practically the same path. Oddly enough, a few weeks before this, Schiaparelli, the Italian astronomer, had computed the orbit of the August meteors, and found them traveling in the same path as Tuttle's comet.

CONNECTION BETWEEN METEORS AND COMETS.

To the scientific world, these two discoveries were indeed a revelation, and yet six years before, in 1861, these discoveries had been anticipated. In the Danville *Quarterly Review*, for December, 1861, Dr. Daniel Kirkwood of Indiana University, published a paper, in which he maintained that the same force which had caused Biela's comet to divide would also cause its parts to *divide* and that this separation would continue until the resulting parts became too small to be seen even with a powerful telescope. And, to use his own words, he maintained that meteors and meteoric rings are the debris of ancient but now disintegrated comets whose matter has become distributed around their orbits. Though Kirkwood recognized the intimate connection between comets and meteors, I am not sure that he realized the whole truth. It seems that the Leonid meteors and the August meteors are the debris of comets in process of disintegration, like the comet of 1882, while Kirkwood, I think, supposed meteors to result from comets whose disintegration is complete.

There are other well established connections between meteoric showers and comets, the most notable of which is that of the lost Biela comet and the meteoric showers of November 28. No one longer doubts the existence of meteoric streams, or that there is an intimate connection between Tempel's comet and the Leonid meteors of November. But there are some clear-thinking scientists who are not willing to admit that all meteoric streams are of cometary origin, and who believe that the theory of cometary disintegration is well established. These men point to Encke's comet which has made more than thirty observed journeys around the sun and shows no signs of disintegration. Then in order to determine the path of a meteoric stream it is necessary to know the velocity with which the meteors enter our atmosphere. This cannot from the very nature of the case be determined accurately, and Professor Schaeberle has shown that a small error in the determination of the velocity would lead to statements ridiculously far from the truth.

It is perhaps too much to expect that such great advances in meteoric science will be made in the next decade as were made during the last period of Leonid meteors, 1866–1872[3]. And yet the questions to be answered are much more definitely formulated than then, and it is possible to command a much greater corps of observers. For it is now known that the observations most needed can be made by observers without expensive instruments or special training. They need only care and painstaking. Therefore, when we consider the widespread interest in the approaching showers, we may confidently expect substantial, if not startling, additions to our knowledge of meteoric science.

[3] In a former article in THE INLAND EDUCATOR (November of 1898) I have pointed out the observations which may be made by an amateur. I will add that I should be glad to send to any one who will address me the maps necessary to make the observations.

INDIANA UNIVERSITY.

MUSIC.

EDITED BY

J. G. CRABBE, Ashland, Ky.

WHAT IS FUNDAMENTAL IN MUSIC?

The power that comes from study prompted by inspiration is the only real power in art, for if we undertake to develop the child in music through his power of calculation in the problems of time and tune, the child will approach musical forms through their construction and will be kept in contact with the machinery of the science, while modern pedagogy has decided that the child shall first be influenced by the spirit of the art. Educators everywhere are agreeing that if children are to be properly trained and developed in music, the subject must be treated as an art and its inspiring, uplifting influences be brought to bear upon them.

Now the inspiration of music is to be derived from but one source, song—the beautiful thoughts of the musicians who have written for children—and if we would construct a correct educational fabric in musical training, we must base it upon song; and as the beginning is made through song, so the work should continue, such studies and exercises being introduced as will give the child a better understanding of the songs and a more perfect mastery of the musical elements embodied in them.

The conclusion is that children should learn sight reading from properly directed singing. This is the very reverse of the prevailing plans in music teaching which by their arrangement compel children to learn singing through logically arranged studies in sight reading. This logical development of music as a science is very misleading. Such a plan has the appearance of gradation on account of the orderly arrangement of successive difficulties and the child at first seems to be learning because he passes easily from one study to another. The weakness of such a plan is that while it is logically correct from a scientific consideration and while the parts of the plan are properly related to the plan as a whole, it is psychologically incorrect and wrong in the relation the plan as a whole sustains to the child—for the child mind reverses the order of development of the adult mind. The development of the child, as all educators agree, is (a) from the concrete to the abstract; (b) from general ideas to details, so that if we are to grade music properly for the child, we must arrange it on his conception of music as an art and not on the adult conception of music as a science.

MUSICAL INSTRUCTION IN PUBLIC SCHOOLS.

There was never a time in this country when it was so difficult for churches to obtain singers for volunteer choirs as now. Not because there are not plenty of good voices, not because young people do not love to sing, but because they cannot read music. Thirty years ago the conditions were quite the reverse. It is true that modern methods of teaching music in schools were unknown at that time, but the work begun by those old pioneers of music in America, Hastings, Mason, Bradbury, and Woodbury, and carried on to a higher state of development by such men as Root, Emerson, and Palmer, resulted in the dissemination of musical knowledge and culture among the masses to an extent unsurpassed, if equaled, at the present time. In those days every hamlet had its singing school during the winter months, and every church in city and country had a choir gallery filled to overflowing with young men and women who could read music and loved to sing. It is a lamentable fact that the decline of music in our churches began with the introduction of musical instruction in the public schools. When this was done churches thought it no longer necessary to continue the accustomed singing school, and parents considered it no longer necessary to give their children instruction in singing. Supervisors of music in the public schools tell us to wait and we will see results. Have we not waited these many years and have not the results been most disappointing?

Educational men are beginning to question whether there is not some false principle of education, something radically wrong at the root of the matter. A prominent teacher in one of the leading normal schools of New York state said not long since, "Music has been taught in our school for more than twenty years and who ever heard of any one learning to read music there?" Is this school an exception or is it the rule? Are there not many teachers in our public schools who are thinking, if not saying, the same thing?

I was recently engaged to conduct a glee club

in one of the leading high schools of New York. The club consisted of about forty members, selected from the best material in the school. Notwithstanding the fact that music had been taught in the schools of that city for more than twenty years, the only members of the club who could read music were a few who had learned to do so through the study of the piano. In that case I taught all the glees and part-songs by rote, precisely as I would have taught them to children in the primary grades. A system of musical instruction in the schools that is productive of no better results than this needs no further condemnation. And yet, it is claimed that music is as well taught in the schools of that city as in any city in the state, and I am inclined to believe the claim is not without a basis of truth.—*George Whelpton in The School Journal.*

IDEALS IN MUSIC.

In our advanced civilization we have gone somewhat astray in the writing of pretty tunes for children, instead of giving them musical ideas to appreciate. How to provide the child with the largest experience, the stuff out of which music can be made, should be our deepest concern. In the two-step atmosphere of the nineteenth century it is a little difficult to give him impressions deep and sound, which will lead him finally to grasp music in its larger meaning. We cannot produce the musician or the artist simply by listening to pretty tunes or tones, but by inspiring him with noble ideas and sentiments, which, if he becomes a musician, will make of his music a life work and a ministry to the human race.

Now that the art of music is corroborated in the science of teaching we need no longer apologize for our work under cover of an arithmetic lesson. Let the law of its beauty sink deep into the children's souls. Flood them occasionally with harmony, as you would your lawn when the turf gets dry. Let the music speak while the teacher keeps silent. It conveys more through a few minutes' simple hearing than volumes of explanation on our part, Subordinate the theory of music to its performance. Finally when, through the ideal conditions presented, we not only get a few facts about music into the child's mind, but arouse his will and the true assertion of himself in song, we gain not only beautiful singing, but the true individuality of the child. We arouse the artist's power, and we contribute to the world's work a vital, active factor. If the work of the teacher of this age is well and intelligently done, the making of men and women as well as artists and interpreters should follow as a natural result.—*Mari G. Hofer.*

MUSIC IN CITIES.

There is a line of civic development in an æsthetic direction which appeals to other senses than sight. The claim of the ear is not forgotten. In Philadelphia and in Boston there is already a municipal band. The mayor of Philadelphia writes that the one in that city has steadily grown in favor. In the summer of 1897 it gave ninety concerts in twenty-three squares. The band in Boston gave its first concert last June. A series followed, one each Sunday on the Common, and two or three every week in public parks and squares. A music commission had been created, as an expression of the city's wish to furnish good free music to the people. The municipal band was of its creation, and was made excellent. A choral society was organized, and the programmes were varied with vocal music, instrumental solos, etc. The popular success was immense, audiences numbering 20,000 persons sometimes gathering on Sunday. The commission also purchased the Mechanics' Hall organ, which it is proposed to place in a public building accessible to the people; and when winter came, a series of indoor orchestral concerts was arranged. The commissioners conducted an examination of the instruments of itinerant street musicians, and the ordinance defining the powers of the board states that, with slight restriction, it "shall have the charge and control of the selection of public music, to be given either indoors or in the open air, for parades, concerts, celebrations, and other purposes." No other American city has yet gone as far as Boston in this direction, though public concerts in the parks are common.

The permanent orchestras, other special musical, and various artistic advantages belong, of course, to a city's artistic as much as to its educational group of problems.—*Charles Mulford Robinson in the June Atlantic.*

The power to imitate is one of the most valuable faculties with which the human mind is endowed. This faculty is brightest during childhood, and without it the young mind could not develop. Children learn songs at first by imitation, which is, of course, the natural way.—*C. H. Congdon.*

RAIN ON THE ROOF.

Coates Kinney. Johann Gottlieb Naumann.

Andantino.

p

1. When the hu - mid show-ers gath - er O - ver all the star - ry spheres,
2. Ev - 'ry tin - kle on the shin - gles Has an ech - o in the heart,
3. There in fan - cy comes my moth - er, As she used to years a - gone,
4. Then my lit - tle ser - aph sis - ter, With her wings and wav-ing hair,
5. There is naught in art's bra-vur - as That can work with such a spell,

p

And the mel - an - chol - y dark-ness Gen - tly falls in rainy tears,
And a thou-sand dreamy fan - cies In - to bus - y be - ing start,
To sur - vey the in - fant sleepers, Ere she left them till the dawn.
And her bright-eye'd cher-ub - brother, A se-rene an - gel-ic pair,
In the spir - it's pure, deep fountains Whence the ho - ly passions swell,

cres.

'T is a joy to press the pil - low Of a cot - tage chamber bed,
And a thou-sand rec - ol - lec-tions Weave their bright hues in - to woof
I can see her bend-ing o'er me, As I list - en to the strain
Glide a - round my wake-ful pil - low, With their praise or mild re - proof,
As that mel - o - dy of na - ture, That sub-dued, sub - du - ing strain,

cres.

mf *cres.* *f* *dim.*

And to list - en to the pat - ter Of the soft rain o - ver - head.
As I list - en to the pat - ter Of the soft rain on the roof.
Which is play'd up - on the shin-gles By the pat - ter of the rain.
As I list - en to the mur-mur Of the soft rain on the roof.
Which is play'd up - on the shin-gles By the pat - ter of the rain.

mf *cres.* *f* *dim.*

From *The Riverside Song Book*, by permission of, and arrangement with, the publisher Houghton, Mifflin & Co.

PRIMARY.

EDITED BY

FLORA J. COOKE, Chicago.

HINTS FOR NATURE STUDY IN OCTOBER.

The growing season is now about at an end and all vegetable life is preparing for winter by discarding—in the case of the annuals, all but the seed; in biennials, all but the fleshy part where nourishment for next year's growth is stored; and in perennials, the leaves.

These discarded portions soon begin the process of *decay*.

The vital parts of the plant (seeds), however, do not decay but are spread by different means to reproduce the plant next year.

Cereals, vegetables and fruits are now being harvested, which makes an interesting study of plant life.

In the study of seed dissemination make observations on local plants. Each pupil will make a collection of seeds and fasten to a piece of cardboard. Label and classify according to the way in which the seeds are distributed—wind, animals, water, by the plant, man.

Note how each seed is adapted in structure to take advantage of some particular means of distribution. Have the children paint and mold in clay the different seeds adapted for scattering by wind, moving water, animals, etc. Have them supply with written statements what these means of expression fail to tell. Note the difference between the falling of the leaves from the maple and the elm, the elm and the oak. On which do the leaves stay green longest?

Study harvesting, storing and distribution of products. Contrast man's method with nature's method of distribution, as seen in the wild plants. Why does the farmer thresh his wheat? What would happen to it if he did not? In what different ways does nature thresh and scatter her seeds? What is her great winter store-house?

In the work with the fruit and vegetables opportunity for observing the seeds will be given continually. Observe whether the children discover that all fruits have seeds, and draw any inferences as to other uses for the fruit than as food for man. Go further and find seeds on the plants and trees in the school-yard. Study the varying forms and their position and arrangement on the plant. The meaning of some of these forms, as winged seeds, etc. How are they distributed? How does the number of seeds whose distributing medium is the wind compare with those carried in other ways? Carry out the picture as definitely as the children's interest will allow. For instance not only that certain seeds are carried by the wind, but just how it is done. Does the wind whirl them into the ground, or do they drop and become buried? Answer such questions only by further observations.—*Chicago Normal School Leaflets.*

FOR OLD SAKE'S SAKE.

I once had a sweet little doll, dears,
The prettiest doll in the world;
Her cheeks were so red and so white, dears,
And her hair was so charmingly curled.
But I lost my poor little doll, dears,
As I played in the heath one day;
And I cried for her more than a week, dears,
But I never could find where she lay.

I found my poor little doll, dears,
As I played in the heath one day:
Folks say she is terribly changed, dears,
For her paint is all washed away.
And her arm trodden off by the cows, dears,
And her hair not the least bit curled;
Yet for old sake's sake she is still, dears,
The prettiest doll in the world.

—*The Water Babies.*

"AS ONE OF THESE."

Every teacher who has read *The Bird's Christmas Carol* by Kate Douglas Wiggin—and all who have not, should—will be deeply interested in this prayer which she puts into the mouth of Mistress Mary, one of the characters in her story *Marm Lisa*. As will be seen, it is the prayer of a teacher for teachers, and expresses a sympathy as deep as is found in the Christmas Carol itself.

"Father in heaven, it is by the vision of thy relation to us that we can apprehend our relation to these little ones. As we have accepted that high trust, so make us loyal to it. When our feet grow weary and our faith grows dim, help us to follow close after the ever perfect One who taught even as we are trying to teach. He it was whom the common people heard gladly. He it was who disdained not the use of objects and symbols, remembering it was the childhood of the race. He it was who spake in parables and stories, laying bare soul of man and heart of nature, and revealing each by di-

vine analogy. He it was who took the little ones in his arms and blessed them; who set the child in the midst, saying, 'Except ye become as one of these.' May the afterglow of that inspired teaching ever shine upon the path we are treading. May we bathe our tired spirits in its warmth and glory, and kindle our torches at the splendor of its light. We remember that he told us to feed his lambs. Dear Lord, help all the faithful shepherds who care for the ninety-and-nine that lie in the safe cover of the fold; help us, too, for we are the wandering shepherds whose part it is to go out over the bleak hills, up the mountain sides and rocky places, and gather in out of the storm and stress of things all the poor, unshepherded, wee bit lammies that have either wandered forlornly away from shelter or have been born in the wilderness and know no other home. Such an one has just strayed into the fold from the dreary hill-country. It needs a wiser shepherd than any of us. Grant that by gentleness, patience, and insight we may atone somewhat for our lack of wisdom and skill. We read among thy mysteries that the divine Child was born of a virgin. May he be born again and born daily in our hearts, already touched by that remembrance and consecrated by its meaning. And this we ask for love's sake. Amen."

TWO INTERESTING GAMES.

SCULPTOR.

A girl who is chosen as sculptor arranges the other players in various attitudes as statues. She then looks to see if each one is in proper position and punishes each player who changed her position with a blow from a loosely knotted handkerchief. When finally all are in position, she says, "The sculptor will not be at home to-day," and leaves the playground. The other players, finding themselves alone, begin to make merry; they laugh and sing and dance. All at once the sculptor returns, saying, "So, the sculptor returns and—," one, two, three, all strive to be in position before she can reach them for punishment with the knotted handkerchief. If the sculptor should hit some one already in place, the statues all come to life again and in turn flourish knotted handkerchiefs in pursuit of the sculptor. The last player in position becomes sculptor. The game can also be varied or given another form by appointing an overseer, who furnishes the players with some occupation as sewing, hammering, planing, etc.

SCALE GAME.

In this game the scale is represented by little girls, the little boys choosing the representatives. The tiniest tot in the room is called up for "Do." The next tiniest follows for "Re" and so on until eight are chosen perfectly graded in height from low "Do" to high "Do." These eight stand in line facing the school and proceed to introduce themselves, each one in turn singing her name, "Do" or "Re" or "Me," or whatever it may be and making a low bow afterward. Then the school, to show their warm personal interest in the line of representatives assembled before them and to become better acquainted with their relation to each other call each one separately three times. They sing: "Do, Do, Do," (Do bows), "Re, Re, Re" (Re bows), and so on until all have been called and have saluted gracefully or otherwise. Then the scale join hands in a circle and dance to the left while the school sings up the scale, and dances to the right while they sing down the scale; when they reach low "Do" they continue singing "Do, Do," until Do steps out of the circle and bows to the other members of the scale and takes her seat. When she is safely seated they begin with "Re," sing up and down the scale, the children dancing as before; they stop on "Re" and repeat "Re, Re," until Re is seated, then use "Me" as the beginning and ending and so until finally only high "Do" is left to dance alone and bow and take her seat.—*Blanche Hand.*

MY SHADOW.

I have a little shadow that goes in and out with me,
And what can be the use of him is more than I can see.
He is very very like me from the heels up to the head;
And I see him jump before me when I jump into my bed.

The funniest thing about him is the way he likes to grow,—
Not at all like proper children which is always very slow;
For he sometimes shoots up taller like an india rubber ball,
And he sometimes gets so little that there's none of him at all.

One morning, very early, before the sun was up,
I rose and found the shining dew on every buttercup;
But my lazy little shadow, like an arrant sleepy head,
Had stayed at home behind me and was fast asleep in bed.

—*R. L. Stevenson.*

MATHEMATICS.

EDITED BY

ROBERT J. ALEY, Ph. D., Bloomington, Indiana.

HISTORY OF ARITHMETIC.

XV.—EARLY WRITERS ON ARITHMETIC - Continued.

Lucas Pacioli, sometimes known as Lucas di Burgo, was a Franciscan friar, and a native of Tuscany. He was a famous lecturer on mathematics at Rome, Pisa, Venice and Milan. His great work was *Summa de arithmetica, geometria, etc.*, printed in Venice, 1494. It is very probable that this was the first *printed* treatise on arithmetic. It had a wide circulation and exerted a great influence on the trend of arithmetic. Mercantile subjects were fully treated. Many of the problems were very long and complicated. A very interesting example of these problems is found in Ball's *History of Mathematics*, page 213.

In 1501, John Huswirt published at Cologne a brief treatise on the Arabic system. This is probably the first book on arithmetic in the German language. The operations are proven by casting out the nines.

The *Practical Arithmetica* by Jerome Cardan appeared at Milan in 1539. Much attention is given to the mysterious properties of numbers. Biblical numbers receive especial emphasis.

The most famous early arithmetic of England was the *Ground of Arts* by Robert Recorde. It first appeared in 1540. It went through many editions, the last appearing in 1699. Recorde introduced the sign of equality. His book exerted a marked influence on the trend of arithmetic in England.

The *Arithmetica Integra* by Michael Stifel appeared at Nuremberg in 1544. The book is marked by scholarship in the treatment of the properties of numbers, surds and incommensurables. The author is the reputed inventor of $+$, $-$, and $\sqrt{\ }$.

The eminent Italian mathematician, Nicolas Tastaglia, published a very complete arithmetic in 1556. This book gives great emphasis to the applications of arithmetic. DeMorgan speaks of it in the highest terms.

Baker's *Well-spring of Sciences*, which appeared in 1583, is a sort of transition book from the ground of arts to the commercial arithmetics of the eighteenth century. Much emphasis is placed upon the rule of practice.

Among the other early writers the following may be mentioned:—Simon Stevinus, at Leyden in 1585, revised by Albert Girard in 1634; John Mellis at London, in 1588; Richard Witt, at London in 1613; John Napier, at Edinburg in 1617.

Nicholas Hunt in 1633 published *The Hand-Maid to Arithmetick refined.* The book contains a full treatment on weights and measures. It gives the rules in verse. The following are examples:

Adde thou upright, reserving every tenne,
And write the digits downe all with thy pen.

Subtract the lesser from the great, noting the rest,
Or ten to borrow you are ever prest.
To pay what borrowed was think it no paine,
But honestly redounding to your gaine.

PREPARATIONS FOR TEACHING ARITHMETIC.

Preparation to teach arithmetic is not different from preparation to teach any other subject. It is, however, sometimes thought to be different. There are those who seem to think that the only preparation necessary is that which will enable the teacher to keep the problems solved one lesson in advance of the class. To do this it may be necessary to use a key, or to call upon a fellow teacher. This lack of preparation accounts, in a great measure, for the unsatisfactory state of arithmetic in our schools.

The first essential is to know the arithmetic. The study of arithmetic alone will not give this knowledge. No complete knowledge of arithmetic is possible without the light that comes from algebra and geometry. These subjects furnish a proper perspective. The teacher should study arithmetic, algebra and geometry and then restudy arthmetic in the light of the latter two subjects. Such a study should give a logical and scientific organization of arithmetic. This is the kind of knowing that should characterize the teacher.

The teacher should have some acquaintance with the history and development of arithmetic. This will prevent him from repeating the mistakes of the past. It will also increase his understanding of the subject. From the history he can draw the material for his class that will promote a healthy interest in the subject.

Whether the teacher has one grade or all grades, he should see the arithmetic for the school course as a logically connected whole.

Seeing this is the combined result of knowing both arithmetic and the child. This very essential element of preparation is many times overlooked.

The final element in preparation for arithmetic, is the daily study of subject-matter and pupil. The object of this study is to enable the teacher to bring the subject to the mind in such a way as to produce the most thought, and to make it most easily become a permanent mental acquisition. The widest knowledge of the subject can not take the place of this daily study. It is this that makes great teaching. It is this that brings pupil and subject to white-heat—the welding point.

THE NEW ARITHMETICS.—III.

The *Elementary Arithmetic* is designed to cover the work of the third, fourth, and fifth years. In these years the pupils should learn perfectly the number combinations which make the tables of the fundamental operations. In addition to this they should get such an insight into the use of the fundamental operations as to be able to readily apply them to concrete experiences. The simpler phases of fractions, percentage and interest are also to be considered.

Miss Cropsey has written her book in harmony with the spirit of the times. She believes that the pupil should be given an experience, and from that get his understanding of number relations. Many problems are given to be pictorially or objectively represented. The purpose of this is to make the child intelligently select the necessary operation for the solution of the problem. If properly used no work will yield better results. On the other hand such work may degenerate into mere aimless *busywork*. The teacher must see to it that pictures are made for the sole purpose of making clear the real nature of the problem. When this is done the picture has served its purpose. The intelligence of the teacher must determine the amount of such work. It will be necessary in most schools to omit a large part of the work of this kind which is indicated in the book. The country boy who has nearly all his life been counting and separating chickens, sheep, cattle and pigs will not need much picture representation to get the point in an ordinary problem. From the above the reader should make only one inference,—mix brains with the use of pictures and objects in number work.

The fundamental operations are really basic. Every teacher should feel the force of this truth. The *Elementary Arithmetic* makes the thought prominent. Much of the work given or directed has to do with number combinations and endings. This phase of the work can not be too greatly emphasized. If the future progress of the pupil is to be assured his early school work must make automatic the elementary number results of the four fundamental operations. This implies much drill upon number independent of any concrete relations. It may be necessary in this work to supplement the book. Skill in accuracy and rapidity should be the aim. To accomplish this the abstract problems and review lists should be used to the utmost.

To make the work pregnant with meaning the school should be supplied with some simple apparatus, most of which can be made by the teacher. There should be a yardstick, with divisions into feet and inches; pint, quart, and gallon measures, and ounce, half-pound, and pound weights. A valuable addition to these would be the simple metric units. These weights and measures should not only be used to illustrate given problems, but the pupils should use them in making problems. This means may help to establish a vital relation between number and the affairs of life.

NOTES.

Miss Katherine Blynn still continues at the head of the mathematics in the Ft. Wayne High School. She is doing good work.

Fine's *Number System of Algebra* and Lefevre's *Number and its Algebra* are two excellent books for teachers. Both books deal with the philosophical side of number.

All teachers of mathematics should arrange to be present at the meeting of the mathematical section of the State Teachers' Association. This meeting will be held on the afternoon of Dec. 26th. Geo. L. Roberts of Greensburg is president and Amelia W. Platte of Indianapolis is secretary. We hope to announce the program in the next issue.

Every teacher should write to his congressman asking for a copy of Greenwood and Martin's *American Text-Books of Arithmetic*. It is published by the Commissioner of Education.

The history of arithmetic in this country is very largely a history of our text-books. This is especially true of the earlier days. Then the text-book set the pace and fixed arithmetic thought more than it does to-day. If we ever have a helpful history of the growth of arithmetic in the United States, it will be written from a complete collection of text-books. Every teacher should be interested in finding these

old books and placing them in some collection. The editor of this department will be very thankful for information concerning any old text-book on arithmetic. By old he means one of earlier date than 1860.

Professor A. Jones of the Marion Normal School has issued a Teachers' Edition of the Indiana Complete Arithmetic. The book contains much interesting and valuable matter not found in the Indiana book. Large numbers of the more difficult problems are completely solved. If used in the proper spirit the book will certainly be a great help. If used as a mere key it will be a real hindrance to the progress of arithmetic.

Modern geometry attracts more attention each succeeding year. One great drawback to its progress has been the lack of good texts on the subject. There comes to us from William Blackwood & Sons, London, a most excellent elementary treatise by J. A. Third, headmaster of Spier's school. The book is very clear and interesting The student who reads it will be surprised at the ease with which he enters the great field of modern geometry. The principle of duality, so emphasized by Reye and Cremona, is made a prominent feature of the work. No principle is more fertile in its results nor will do more to start the student on lines of independent investigation. The book is to be commended.

Dr. J. E. Manchester is the successor of Professor Samson in the department of mathematics at Vincennes University. He is a graduate of the University of Minnesota, and has done graduate work at Michigan, Göttingen, Heidelberg, Leipzig and Tübingen. He has had a wide and successful experience as a teacher. It is a fortunate thing for mathematics in Indiana, to have such men come among us.

ALCOHOLIC BEVERAGES.

By J. T. SCOVELL.

ALCOHOLIC liquors are made from starch, and are starch more or less fully digested. In moderate quantities they are foods like starch, sugars and fats. In addition to serving as foods alcoholic beverages exert an anesthetic influence which, to most people, is pleasing and enjoyable. This action is not explained beyond the suggestion that it may be due to a disturbance of equilibrium among the elements of the body caused by the strong affinity of alcohol for water. This enjoyable effect in many cases awakens desires and develops appetites which lead to intemperance. Intemperance long continued results in degeneration of the tissues and organs of the body and in the erratic action and premature decay of the mind.

Dr. Crothers and other temperance authorities speak of altered and shrunken brain and nerve cells; of the fatty and enfeebled heart; of blood corpuscles with distorted form and abnormal action; of atrophied lungs and diseased kidneys; of the thickened softened stomach and the hobnailed liver; of the diseased skin and deadened sensibilities, as the result of intemperance. Such discussions have led many people to think of these conditions as caused by the action of alcohol alone, as effects peculiar to the action of alcoholic beverages. This of course is not true, and is not what they mean to teach, for Dr. Crothers in another connection says "It is not possible at present to specify any particular diseases which are caused by the action of alcohol alone." This practically says what many recognize as true, that all or nearly all the abnormal conditions usually ascribed to alcohol may result from other causes. Overwork—physical or mental, loss of sleep, lack of nourishment, violent anger, and other strong emotions will cause as well-marked degenerations of tissues and organs as are charged to the intemperate use of alcoholic beverages. In fact the abnormal conditions mentioned come on with advancing years; no one has them all; some, one or more; some, others. Alcoholic intemperance hastens the advent of these conditions, intemperance in eating, intemperance in work or in violent emotions or continued privations will also hasten the development of these conditions. If there were no alcohol, there would still be hobnailed livers and diseased kidneys; thickened dyspeptic stomachs and fatty hearts; shrunken and distorted nerve cells and blood corpuscles. There seems to be no evidence to show, that alcohol, even when used intemperately, causes structural changes in the tissues and organs of the body. Alcohol, in

common with many other causes, hastens the approach of natural degenerative changes.

Alcoholic beverages are foods or poisons, are useful or harmful according to the manner in which they are used, and the manner of use depends very largely upon the individual. Some people are susceptible to the influence of alcohol, are easily affected by alcoholic beverages and easily acquire intemperate habits. Such personal peculiarities are common—physicians meet them frequently. Many people are predisposed to certain diseases or are injured by certain foods or medicines. These peculiarities are supposed to be due to some abnormal condition of the body. Susceptibility to the influence of alcohol is thought by many to be due to some defect or abnormal condition in the central nervous system, whose cause may not be known. Many people think that these abnormal conditions are generally caused by intemperance, and that they may be transmitted. Dr. Norman Kerr says, "that in nearly 3,000 cases of chronic alcoholism he found that fully one-half had an inebriate ancestry." Other observers make similar reports, and claim that the proportion of hereditary cases is on the increase. If we cannot specify any diseases, any structural changes as caused by alcohol alone, it is doubtful if the effects of intemperance are transmitted to offspring. Conditions that, predispose to alcoholism undoubtedly are handed down from father to son, from parent to child, generation after generation. But at the present time it cannot be shown that intemperance causes such conditions, nor that the effects of alcohol upon the system are transmitted.

Dr. Stuver writes: "What subtle but resistless power has impelled races, nations, and individuals to give themselves up to an indulgence and debauchery that have inevitably led to their ruin or extinction? What caused the degeneration of the Persians and of the Romans? What throughout all time and among all nations has been the result of the use of narcotic and stimulating poisons save effeminacy, degeneration and extinction?" Dr. Nordan claims that a general degeneration of the race is going on, and Dr. I. N. Quimby thinks that alcoholic intemperance is the cause. Noah and Abraham drank alcoholic liquor to excess, got drunk. Alcoholic beverages have been used freely and often intemperately from then down to the present century, with scarcely a protest. And yet within historic times the span of human life has been doubled and is still increasing. And within that time the population of the world has been muliplied by ten. The human race is not degenerating. Dr. F. C. Myers writes: "There has never been a time in America when every indication pointed so strongly to a decrease in intemperance as at present. There has never been so little drinking as at present, and never such a strong tendency toward moderation in quantities where alcoholic indulgence is general. The most careful figures bear out this statement."

Ernest Pellew writing in the *Popular Science Monthly* for June, 1897, claims "that public men of the present are longer lived than were the ancient statesmen, because they use less alcohol, are more temperate in their habits than were their ancestors." Dr. Stuver and Mr. Pellew make the same mistake. Historians assign other causes for the decay of nations and races. Alcoholic intemperance was, doubtless, one of the causes, but it does not seem to have been by any means the most important. Public men are longer lived, and so is every member of any civilized community, longer lived than his ancestors. Sanitarians say that the purer air and purer water resulting from enlightened systems of sewerage and other sanitary measures in the nature of cleanliness have been the main cause of increase in length of life. Temperance in eating, and in drinking has been a cause but by no means the main cause of the increasing expectancy of life in civilized communities.

It is interesting to note that the German tribes from the earliest historic times have been noted for their free and often intemperate use of alcoholic liquors. And yet their history has been one of progress until to-day they are the leading nations of the world. They easily surpass all others physically, intellectually, morally and in every other way. Statistics are not available, but if the common impression is true they have easily surpassed all others in the consumption of alcoholic liquors.

If alcohol were as destructive as claimed by some, and if its effects were transmitted to offspring as many suppose, progress would seem to be impossible, and degeneration would be inevitable.

The intemperate use of alcoholic liquors lessens mental activity and reduces muscular force, and is injurious in many ways. The number of persons in any community who are seriously injured by intemperance may be great, yet they form a very small per cent. of the whole. This per cent. is so small that at present it is impossible to show that intemperance has hindered progress in the race or caused any sort of race degeneration. The effects of intemperance upon the individual may be profound and

disastrous, but the effect upon the race is at present imperceptible.

Intemperance is a great evil. Not as great as some suppose, but one of the great evils that beset the human race. The evil is of ancient origin. Abraham and Noah drank to excess, some of the ancient Egyptians used alcohol intemperately; Alexander the Great is said to have died as the result of excessive drink; many of the Romans were intemperate; and many men, public and private, even down to the present have suffered and perished from the effects of strong drink. It has always been recognized as an evil at least by some members of the different communities, and there doubtless have always been persons in every community who were temperance reformers. What has been done toward checking the growth of this evil, and toward eradicating its effects? First, the general advance in culture resulted in different and more refined methods of recreation and pleasure; in a different standard of excellence; in a higher appreciation of self-control and of all that contributes toward honorable manhood. Grossness or intemperance in eating or drinking, in thought or expression of any kind is not considered good form. Intemperance of any sort, in any direction is looked upon as a weakness to be deplored. And the intemperate person soon becomes an object of pity or disgust. This public sentiment is really an immense stride toward universal temperance. Again, the changes in relationships that have come into economic society through the introduction of machinery have put upon many individuals an immense responsibility, involving large quanties of property and often thousands of human lives. This is well illustrated in all kinds of mining and manufacturing industries as well as in railroading and in the shipping industries. There are thousands of these responsible positions which all classes of society recognize ought to be filled by men of the strictest temperance. These circumstances have contributed largely toward the growth of a public sentiment against intemperance.

Business men generally discourage drinking among their employes, and business men do not drink among themselves as much as formerly. The custom of treating that often played an important part in wholesale transactions has largely passed away. The intemperate man, the man under the influence of liquor, is not at his best physically or mentally, is at a disadvantage whether in society, in business or in the circles of manual labor. It has been said "that intemperance is passing away by a process of evolution, by the survival of the fittest." In these days of intense competition only the man in the full possession of all his powers can succeed. With the beginning of the growth of this public sentiment came the formation of temperance societies, organized for systematic work against the evils of intemperance. To these belonged many intense, earnest men and women who were ready to work, in the way that seemed best, for the good of humanity. There was everywhere the densest ignorance concerning every phase of the subject and these intensely earnest people often quarreled among themselves as to methods of work, called hard names and ascribed bad motives, so that there has been very much lost energy and motion in the temperance movement. In general, these people have been honest, and their mistakes, if any, have been of the head and not of the heart, and their work has done much, very much, toward the growth of the present public sentiment against intemperance. The church, also, in all its branches, has generally been a temperance society and has done good work for the cause.

The medical profession, who, as a class, know more about the evils of intemperance than any other, have done much for the cause of temperance. Formerly alcohol was used extensively, and often perhaps carelessly by nearly all physicians. Now many do not use it under any circumstances, and those that do use it, recognizing its power for evil, are more careful to give it in definite doses for definite purposes. The discussion of the liquor problem occupies considerable space in the Medical Journals, and often finds a place on the programs of medical associations. Gradually the problem is passing from the domain of assertion and exaggeration into the domain of careful, deliberate investigations. These studies made with care by experts, with the most approved appliances have resulted in an accumulation of information that seems to make scientific temperance possible. These investigations seem to show that alcohol in moderate quantities is in some sense a food and not a poison, that alcoholic beverages as ordinarily used are not as dangerous and harmful to the individual and to the race as many had supposed. Yet, with these ideas has come a broader, deeper, fuller appreciation of the evils of intemperance, and never before have there been such numbers of people from all grades of society arrayed on the side of temperance. And this condition of affairs is not confined to the United States and Canada nor to English speaking people, but extends to the nations of Europe. "Professors in the universi-

ties and practicing physicians in Germany are pushing the study of the alcohol question." It is said "that three clubs of Leipsic students have abandoned the 'morning drinking bout' and that several others are contemplating doing the same thing" because they think that drinking lowers their capacity for athletics. And there is evidence that many of the Germans are beginning to realize that drinking habits interfere with mental activity.

Thus, even in Germany, there is growing a public sentiment against intemperance. The conclusions of the more strictly scientific investigations of the present are appealing to different classes, to persons who were repelled by the exaggeration, so common in some circles. Preachers do not say as much about hell as formerly, temperance lecturers do not exaggerate and misrepresent as much as formerly. And the causes of religion and of temperance are more effective for the change. Much has been accomplished. What remains to be done, what does the present suggest for the future? Why do people drink alcoholic beverages? What are the causes of intemperance? In studying the effects of alcohol we found that it caused pleasant physical sensations, and promoted social intercourse; that it deadened pain and drowned sorrow and suffering of every kind. Intemperance is undoubtedly one cause of poverty and suffering. But poverty and suffering, and the desire for physical and social enjoyment are the main causes of intemperance. Wants, legitimate desires, planted in the breast by the Creator are the causes of the drink habit. Supply these desires in a better, more legitimate way, and the temperance problem is solved. Give every man employment at good wages, so that he may have good food and a happy home and the saloon will soon be a thing of the past. Contentions among temperance people as to methods should cease. Be neighborly, let the fight against intemperance continue, petition for wise legislation and for cooperation. But the social and economic conditions, which are the real cause of intemperance, are worse than intemperance, and must be radically changed before we can hope for universal temperance. The real problem is one of social economics.

OWEN COUNTY TEACHERS.

One of the most interesting features of a very profitable institute held in Owen county at Spencer, September 11-15 was the re-union exercises of the ex-Owen county teachers, citizens, and other visitors. Thursday was almost entirely given up to these exercises which consisted chiefly of talks on the various phases of education. Those present were made to feel that Owen county's poor clay soil grows a product that is in great demand—the teachers which she has sent into the educational world.

Of the teachers present of whom Owen county may well be proud were Dr. Aley, O. P. McAuley, J. A. McKelvey, George Willoughby and others. Those absent were D. K. Goss, Superintendent Spear, J. B. Wisely, N. G. Wark and many others too numerous to mention.

Dr. Aley first spoke of his experience in Owen county as a teacher and then passed to what he considers the chief element of success in a teacher—He must, above all, be a person who has an honest and sincere purpose; his heart must be in his work.

O. P. McAuley spoke of the lamentable fact that teacher's libraries can in most cases be carried in our arms. He urged the necessity of teachers buying some good books each year and studying them.

A. D. Moffit showed how a superintendent can help his teachers to help pupils. He insisted on the great need of the teacher being a student in order to be able to give such help as is needed, and thought the pleasure coming from really helping one is ample pay for the pains.

Judge Franklin gave a graphic picture of the schools of Owen county as they existed fifty years ago. He urged the use of the greater opportunities which are offered today and admonished the teachers in all their work to seek the "spirit which maketh alive" and to shun the letter which kills.

Judge Robinson gave an interesting talk in which he spoke of his experience as a teacher. He said the present prosperous condition of the schools of the county was largely due to their having been started right. He grew eloquent in speaking of the influence of H. B. Brown of Valparaiso whose influence reached Owen county at an early day, and put it into the minds of Owen county's young men to seek the higher life.

Dr. Jenkins of Indianapolis university gave a lecture on the "Aim of Education" in which he showed that real education should aim to make a man fit to live and work in the great social world.

J. A. McKelvey gave an interesting talk in which he narrated the story of a negro boy who had just fallen into a molasses barrel full of molasses. The negro said "Oh for a thousand tongues to do this subject justice."

Ex-Supt. D. M. Geeting gave an interesting talk on the attitude of the teacher to the pupil illustrating it with his usual fitting stories. To a visitor the educational interests seem moving in the direction of progress. The superintendence is intelligent, close and efficient. The teachers are young and full of the spirit which moves things.

D. McCARVER.

TALKS TO TEACHERS ON PSYCHOLOGY: AND TO STUDENTS ON SOME OF LIFE'S IDEALS.*

This is the title of Professor Wm. James' latest book. It is a very readable book and will be interesting and valuable to any teacher. It is written in the author's refreshing style and is sure to be widely read. It deals with many of the vital problems in education and is full of practical suggestions to the thinking teacher. We use practical in the only sense in which it should be used in education, and not in the mechanical, device, sense.

In his chapter on "Psychology and the Teaching Art" he says some things that are timely and good. He regards "the fermentation which for a dozen years or more has been going on among the teachers" as a very promising feature in life and in the profession. He says that psychology ought to give the teacher radical help; but that teachers make a great mistake if they think that psychology, being the science of the mind's laws, is something from which they can deduce definite programmes and schemes and methods of instruction for immediate schoolroom use. He says psychology is a science and that teaching is an art; that sciences never generate arts directly out of themselves. Professor James is certainly right. The teacher must get his insight and make his own application.

His steps in the teaching process are: (1) Work your pupil into such a state of interest in what you are going to teach him that every other object of attention is banished from his mind. (2) Reveal it to him so impressively that he will remember the occasion to his dying day. (3) Fill him with devouring curiosity to know what the next steps in connection with the subject are.

We like what he says in regard to child-study; it is sound common sense. Some of the material of the book is to be found in Professor James' former books, but what he has repeated is well worth repeating, notably his chapters on the "Stream of Consciousness" and "Habit."

*Henry Holt & Co., New York. Price $1.50.

One strong point in what Professor James writes is that he makes you think, whether you agree with him or not. Possibly another strong point in his work is the fact that he leaves something for the student to do in the way of organization. He is so full of his subject that he bears down upon you with a perfect avalanche of facts that you must accept at once as convincing or get on your thinking cap and meet him with the spirit of one seeking the truth.

We cannot hope to do more than indicate some of the strong points in this book and urge every reader of THE EDUCATOR to read for himself. And first let us emphasize Chapter V as dealing with a very important factor in education. In our opinion it is in connection with this thought of reactions in school work that the greatest defect in our system may be found. In education the "give" must be made equal at least to the "take." This would be a pretty good principle in social and moral life everywhere. But in education the expression must tend toward actual *creation*. Mr. James says, "*No reception without reaction, no impression without correlative expression*, is the great maxim which the teacher ought never to forget."

In another chapter the author discusses "Native Reactions and Acquired Reactions." He says "*Our education means little more than a mass of possibilities of reaction, acquired at home, at school, or in the training of affairs. The teacher's task is that of supervising the acquiring process.*" He states the principle that underlies the process and aptly illustrates it. Vide pp. 39 and 40. The author thinks a bad reaction is better than no reaction, for it gives the teacher a purchase on the child. Just so. There is more hope for one who chooses and chooses wrong than there is for a puppet.

The discussion of native reaction is strongly suggestive and may furnish a valuable basis for action to the teacher who thinks.

We may emphasize one other point, out of many, and that is in connection with his helpful discussion of the will. He speaks of two types of inhibition—by repression or negation, and by substitution. One is negative and the other is positive. One emphasizes the error and drives the devil in, and the other emphasizes the virtue which is to be substituted and drives the devil out. It is a most important point in school work and every teacher needs to master the principle. It would almost revolutionize the present ways of management and control in school and home.

In his talks to students on life's ideals, Professor James has three chapters under the following titles: "The Gospel of Relaxation," "On a

Certain Blindness in Human Beings," and "What Makes a Life Significant?" These are valuable to teachers of course, for no one is a teacher who is not a student.

In his first chapter we find the following: "They talk much in pedagogic circles to-day about the duty of the teacher to prepare for every lesson in advance. To some extent this is useful. But we Yankees are assuredly not those to whom such a general doctrine should be preached. We are only too careful as it is. The advice I should give to most teachers would be in the words of one who is herself an admirable teacher. Prepare yourself in the subject so well that it shall be always on tap; then in the classroom trust your spontaneity and fling away all further care." Well, that clause is susceptible of a very wide range of interpretation and it probably has done more harm than good for the profession. It was a world of comfort to some teachers who have been dead a score of years. There is so much difference in opinion as to what it means to "prepare yourself in the subject," and we have known some things "always on tap" to get terribly stale. We haven't seen very much spontaneous *teaching*, whatever it ought to be called, and there has been always too much "flinging away all further care."

If Professor James means by preparing oneself in the subject that he is to know not only the facts in the subject, but the *truth* that comes from an assimilation and an organization of those facts, and that one is to know so well the difficulties that lie in the way of the mastery of the subject that he is able to put himself sympathetically in the place of the learner at every stage of the process; and if he means by keeping it always on tap that the teacher, year in and year out, month in and month out, day in and day out, is to keep the truth uppermost by a constant study of old data and as constant a gathering of new, so that the subject will always be new; and if in all this one is to see so clearly the process in the development of his subject that each step each day will stand in its proper relation to the whole, and can trust to his spontaneity and fling away care, well and good—we agree.

But if by preparation in the subject he means a vast collection of facts and statistics, with no mastery of the truth, and consequently no organization; and if by having it always on tap he means the mere presence in consciousness of these facts so that the teacher can always get hold of some of them, and so never be at a loss for something to present that belongs somewhere in the subject, we do not believe there is any proper preparation in the subject, and we are sure there will be no *teaching*. This fact, statistic, syllabus, tap business is being run in the ground in some American universities, and we do not refer to Harvard.

These final chapters of this book are delightful and will furnish large inspiration to teachers of all grades. The book is a valuable one from many points of view. It could be read with much profit by parents as well as teachers. We commend it; but when you read it keep by you a good stock of interrogation marks.

FRANCIS M. STALKER.

BITS OF INFORMATION IN GRAMMAR.

LOGIC AND GRAMMAR.

As indicated in the last number, the first bit of logic which the student of grammar must master is the nature of the thought and its elements. Not in a technical way, but in a simple, elementary way, he must see that a thought is a mental activity in which the mind asserts a relation between ideas; that this mental act is, therefore, always composed of three elements: thought subject, thought predicate and thought relation; and that the thought relation is always one of agreement; e. g., The apples are ripe, The rain falls in torrents; or one of disagreement; e. g., Clouds are not solid, The girl does not sing well. This much logic is essential to the mastery of the sentence as a whole.

But the child must also have an elementary knowledge of the subordinate elements of the thought—ideas. The thought subject, the thought predicate, and the thought relation are the principal elements of the thought. Each of these may be composed of a number of subordinate elements or ideas, and if the child is to understand the different kinds of words which compose the parts of the sentence, he must know the different kinds of ideas which they express. He may be led to see these for himself in some such manner as the following:

The monkey's principal companions in the house are a very valuable talking parrot and a handsome French Angora cat.

We call that which the word expresses an idea. Notice the ideas expressed by the words in the sentence above. You will see that they are not all alike. Take, for example, the ideas expressed by the words, "house" and "cat." You will notice that they are ideas which may be made thought subjects, or you may think, affirm, or assert another idea of these ideas; e. g., you may say, *The house is beautiful. The cat is handsome.* We call such an idea an object of thought.

See if you can find other words in this sentence that express objects of thought.

Now think carefully the ideas expressed by the words, "very," "handsome," and "talking." You will notice that they express ideas which belong to and distinguish other ideas. The idea, *very*, belongs to the idea, *valuable;* the idea, *handsome*, belongs to the idea, *cat;* and the idea, *talking*, belongs to the idea, *parrot*. We call this kind of idea an attribute. We could not distinguish one idea from another if it were not for their attributes. How do you distinguish the *cat* from the *parrot?* Name some of the attributes of the *cat* and then some of the *parrot*. Are they the same? Name other words in this sentence which express attributes.

Now notice carefully the ideas expressed by the words, "in," "are," and "and." The ideas expressed by these words do not belong to other ideas, nor are they ideas about which we may think, affirm, or assert other ideas. We cannot say, *An are as tall* or *An and as sweet*. These ideas are merely the connection or relation which the mind sees between other ideas. The idea, *in*, is the connection which the mind sees between the idea, *companions*, and the idea, *house;* the idea, *are*, is the relation between the thought subject and the thought predicate; and the idea, *and*, is the relation which the mind sees between the idea, *parrot*, and the idea, *cat*. We call such an idea an idea of relation.

If I place a book on the table, what word expresses the relation between the *book* and the *table?* Suppose I place it under the table? Beside the table? Mary goes into the garden. What word expresses the relation between the *going* and the *garden?*

Now if the child has followed carefully, and if the teacher has been skillful with her questions and illustrations, the child in the seventh grade will see that all the ideas which he thinks can be divided into three classes. All elements of the thought are objects of thought, attributes, or relations. And he will see the nature of each one of these. An object of thought is an idea about which the mind may assert or affirm another idea. An attribute is a mark or characteristic by which we distinguish other ideas. An idea of relation is the connection which the mind sees between other ideas.

This is the reason and the only reason why we have substantive words, which express objects of thought; attributive words, which express attributes; and relation words, which express ideas of relation. If there were more kinds of ideas, we should have more classes of words, and the only reason why we have nouns, pronouns, adjectives, adverbs, prepositions, etc., is that we have different ways of expressing these same ideas; attributes may belong to different kinds of ideas, and ideas of relation are of different kinds. How can the seventh or eighth grade pupil *understand* the classes of words and their properties, different kinds of modifiers, etc., without understanding so much of logic as is indicated above? Of course he can commit the classes of words, modifiers, etc., to memory without knowing anything of logic. One can commit anything to memory, the multiplication table, the alphabet, Chinese characters, anything, whether it is logical or illogical; but I ask the question, how can a pupil *understand* the subject of grammar, *think it out for himself*, make it *a reasonable thing to himself*, without understanding so much of logic as is indicated in this article and the article in the number preceding this?

J. B. WISELY.

TO JAMES WHITCOMB RILEY.

To him who speaks of humble things,
Who loves all humble hearts and ways,
To him we give our modest praise,
For what he brings and what he sings.

While others soar to loftier themes,
And dwell in lore of ancient tome,
He is content with child and home:
These are the gleams of all his dreams.

Who has not found a balm for strife,
Or blest relief from some dread curse,
Within the realms of his "child-verse"?
So full, so rife with sweet child-life.

Our ever-faithful friend, although
He dwells from all the crowd apart;
But never was there readier heart
For that deep woe which killeth so.

We honor all our sons, but more
We honor him who sings so well,
Who doth so near to nature dwell,
Whose heart runs o'er with sweet child-lore.

GEORGE BICKNELL.

SULLIVAN, IND.

She [Mother Carey] sat quite still with her chin upon her hand, looking down into the sea with her two great grand blue eyes, as blue as the sea itself. Her hair was as white as the snow—for she was very old—in fact as old as anything you are likely to come across, except the difference between right and wrong.——*The Water Babies.*

THE TOWNSHIP INSTITUTE.

THIRD MEETING.

NOTE—It should be borne in mind that the outline on Organic Education is based upon Miss Scott's book by that title, published by D. C. Heath & Co., 90 cents and the outline on Reading upon Professor Clark's *How to Teach Reading*, published by Scott, Foresman & Co., 75 cents.

ORGANIC EDUCATION.

OUTLINE.

1. The Study of Chapters IV, V and VI. (First read each chapter as a whole, seeking its dominant thought.)
 a. The Sequence-Method.
 (1) Form a clear idea of the scope of the word "story." (Pages 31-32.)
 (2) The process in "telling the story." (Pages 32-33.)
 (a) Reflect upon the importance of the thought in "the predicate follows the evolution of the central thought." (Page 32.)
 (3) Explain each of the five main characteristics of an effective sequence. (Pages 33-38.)
 (a) Show the advantages of each to the pupil, as giving rise to "the beginning of scientific knowledge" (page 35), to "a sense for perspection" (page 36), etc.
 (4) Observe that the material expressed in a sequence may be life, outer (as shown in the action of the caterpillar, on page 38), inner (thought as shown by the reference to Darwin, page 40, and feeling as indicated in the action of Jean Valjean, pages 40-41), and nature.
 (5) Consider carefully the five important results mentioned on pages 41-42.
 b. Special applications of the Sequence-Method.
 (1) The results in Composition work. (Pages 43-45.
 (2) The application in Grammar.
 (a) Examine carefully the process with the descriptive adjective (pages 46-47), and the eleven additional applications in order to understand, to a degree, the possibilities in the subject (Pages 47-50.)
 (3) The application in reading, (Pages 50-51.)
 (a) Reflect upon the passage beginning with "in the opinion" and ending with "is assured," page 51.
 c. The Formal Steps.
 (1) Name and explain each of the six steps.
 (2) Give an illustration of them by sketching a lesson on "the work of a river."
 (3) In what respect are these six steps "an adaptation of those defined by the Herbartian school?"
 (4) Explain the sentence beginning with, "They may all, however," page 52.

COMMENT.—CHAPTER IV.

1. It will be observed that the work this month in Organic Education involves attention to three things.
 (a) The story.
 (b) The application of the sequence-method.
 (c) The formal steps.

Work done in previous years by the teachers upon *The Essentials of Method* by Dr. De Garmo and upon *General Method* by Dr. McMurry has resulted in considerable familiarity with the formal steps. In consequence the commentary will deal mainly with the story and the applications of the sequence method. The word "story" is very familiar and its general significance is clearly known. It has always been felt to be an attractive form of discourse. It gives an added interest to Homer to think of him as the story-teller of the Greeks wandering from village to village. It was through the story of his perils in war that Othello bewitched the fair Desdemona. The story is used in this connection, however, with a special significance. While retaining the feature of attractiveness the present use emphasizes several features that are not ordinarily held prominently in view when thinking of the story. An important one of these features is that of presenting the material in a bare outline. The story of all the material of the four gospels could be presented very briefly in such an outline. It would appear somewhat as follows:

Jesus was born in Bethlehem. He was educated according to the Jewish custom. He taught through the different villages and cities of Judea and Isreal. He was arrested. He was tried. He was condemned to death. He was crucified. He was entombed. He rose from the dead. He ascended into heaven.

According to Patrick Henry the acts of the colonists prior to the actual beginning of war could be presented in story form thus: They petitioned. They remonstrated. They supplicated. They prostrated themselves before the throne. They implored its interposition.

Not only can material which has not yet been organized be presented in the story form but organized discourse, also, may be thus thought out and presented. Thus with Lincoln's Gettysburg Address, the story form may be made effective by grasping first the following serial order: Our fathers brought forth a new nation conceived in liberty. We are now testing this nation. We have met on a battlefield. We are dedicating a portion of this field. We are dedicating it for those who gave their lives for this nation. We are performing a fitting deed. In a higher sense we cannot dedicate this field. It has been dedicated by those who died here that the nation might live. We should dedicate ourselves to the cause for which they died.

In this case although the subject seems to change it is really found in the "new nation" which the fathers dedicated.

2. In the story as here used five characteristics appear.

(a) There is a completeness. The material is viewed as a whole. Beginning at a given point it either returns or tends to return to that point. This is shown by the author in the example of the plant. If Jesus is conceived as descending from heaven for his incarnation this total view is shown in the story of the Gospels as given above.

(b) There is a pervading unity in the story. In Lincoln's address it was the idea of the new nation brought forth by the forefathers.

(c) There is a selection of material. Only those facts are chosen which tend to bring out the essential significance of the main subject.

(d) There is a proportion. Some of the facts stand in immediate relation to the main subject. Others have a secondary relation, and others are still more remote. This order of importance is observed.

(e) There is a progressive order. Sometimes this progressive order reveals the category of time. Again it may show the category of cause and effect, etc.

3. It is important to notice the influence of this kind of work upon children.

(a) The completeness that belongs to the story produces upon the children two main effects:

(1) It satisfies their longing for the entire object, (2) It cultivates the habit of looking at things as the whole, of seeking the total view.

(b) The characteristic of unity in the story cultivates the habit of seeking the unity underlying variety. The author's discussion shows other valuable effects arising from these different characteristics pertaining to the story.

CHAPTER V.

This chapter is of special importance in showing the application of the sequence-method to various forms of language work. The story in bare form, as given below, may be used for instruction in regard to the sentence as a whole; subject; predicate; copula; the phrase; the clause; the parts of speech; etc.

The golden-haired Orpheus played.
The lovable Orpheus charmed.
The mighty Orpheus won.
The stricken Orpheus grieved.
The forlorn Orpheus visited.
The faithful Orpheus secured.
The anxious Orpheus lost.

The teacher should note carefully the work given by the author on pages 46 and 47 in reference to this story.

CHAPTER VI.

In considering this chapter attention should be given first to the fundamental principle of the Organic System which is here repeated on page 52—the progressive organization of interest. It is also to be closely observed that the six formal steps are held to be merely guide posts, unimportant in themselves. Close attention should be devoted to the last step. Each teacher should inquire whether in his own school that step is given the prominence that it deserves.

HOW TO TEACH READING IN THE PUBLIC SCHOOLS.

OUTLINE.

I. THE CRITERION OF QUALITY. (Page 80.)
 a. What determines the quality of the voice?
 b. To what extent does emotion change the speaker's natural quality?
 c. What relation is there between imagination and quality?
 d. How would you develop the quality of voice necessary to express elevated feeling?

II. THE CRITERION OF FORCE. (Page 101.)
 a. Discriminate between "Radical" and "Final" stress.
 b. What would you infer of the temperament of a speaker whose delivery was strongly marked by Final stress?
 c. How would you correct such a fault in a pupil?
 d. What objections are there to telling a pupil to read louder?

COMMENT.

Nearly every child has the ability to put considerable feeling into his reading, and yet little of this feeling is manifested in the average schoolroom. The voice of the child at home, at play, among his fellows, expresses the entire gamut of feeling, but his classroom reading is generally dull and monotonous as far as the quality of his voice is concerned. To correct this defect the utmost care must be used. In the first place, the teacher's criticism should generally be constructive instead of destructive; affirmative rather than negative. In the earlier stages the class should not be encouraged in fault-finding criticism, for such a practice soon becomes a terrible vice, and tends to destroy completely that stimulating classroom atmosphere so necessary for the development of the power of expression. There are some localities where this vice has laid such firm hold upon the teachers that expressive reading has almost entirely disappeared. The child is mortally afraid of making a mistake, and the rest of the class seem to take a positive delight in picking him to

pieces. How can we expect the imagination to flourish amid such surroundings?

To develop the feeling necessary to affect the quality of the voice, children should have frequent drills upon specific extracts or selections. Let the teacher choose a number of passages from any of the readers, and, further, from the daily life of the children, and show them (and this is the most important of all) that the feelings expressed in the various illustrations are precisely those experienced by the character whose words are found in their reading lessons. Suppose we are reading a heroic selection, and we come to the words "Hurrah! Hurrah for Sheridan!" If we can show the child that these black type, that seem so meaningless to him, are the expression of the same feeling that has stirred him when he shouted for one of his friends who had won a race, or under any similar condition, it will not be difficult *to transfer the feeling from real experience to the fictitious one on the printed page*. Or, again, imagine the principal, or the superintendent, or the governor, has granted a holiday to the school, will it be difficult to have the pupils enter heartily into a cheer, "Three cheers for the governor?"

Now let the teacher find many examples of greater difficulty than those above cited, and let the class drill in the expression of joy, enthusiasm, and similar feelings. With a little care innumerable illustrations may be found near to the child's experience, and practice upon them will in a very short time produce marked results.

Two simple questions will assist the teacher to get the best results from these drills. Where the child fails to manifest the proper feeling in the reading of direct discourse, let the teacher ask, "How did so and so feel when he said that?" This will stimulate the imagination and eventually, if the child can grasp the meaning, lead to proper expression. When the feeling is absent in the reading of description, let the teacher ask, "How do you feel about that?" Or, "Suppose you were telling this story to your mother, would you tell it in that way?" It is extremely interesting to note how excellent the results will be when this plan is faithfully carried out.

It is the spirit of poetry that we must endeavor to bring to the child's notice, and which his voice will spontaneously manifest. Hence it is not too much to say that sympathetic teaching is more necessary in the realm of reading than in any other part of the curriculum. I would, therefore, in conclusion, urge upon the teacher that she spend all the time possible in preparing the class before the oral expression begins. If three or four periods are necessary for full preparation let them be given unhesitatingly, for if we succeed in impressing the spirit of a selection upon the child we have given him something of permanent value and laid the foundation for a solid structure in the future.

S. H. CLARK.

HISTORY.

OUTLINE.

1. Study the great historic path of the Aryan race from the Indus westward, part of it passing up the Tigro-Euphrates Valley, another part, (the Greeks) passing on westward into Greece, another part (Rome) passing still farther westward into Italy.

2. In connection with the story of Cleon, in the Ten Boys, study the geography of Greece and see its effect on dividing Greece into many small divisions and thus making little *city* states.

3. Work out the Institutional Life of the Greeks through the story of Cleon and compare it with the life worked out in the two grades dealt with in the First Institute.

Especially compare the *artistic* life of the Greeks with all the previous life studied. Show how we in America still turn to Greece for our models in sculpture, architecture and literature.

4. Study the Institutional Life of Rome as shown in Horatius, and compare the great *government* and *law* and *rule of one man* as seen in Rome with that seen in Greece.

Good books for use in preparing this lesson: History of Greece and History of Rome, published by American Book Co.; price of each, 35 cents. Myers' General History, published by Ginn & Co

See also Professor Kemp's Outline of Method in History, Inland Publishing Co., and his discussion of the subjects of this institute as found in THE INLAND EDUCATOR for October and November, 1897.

PROGRAMME OF TOWN AND CITY SUPERINTENDENTS' MEETING AT INDIANAPOLIS.

THURSDAY EVENING, NOV. 9TH.

Presentation of High School Course of Study Superintendent W. A. Millis

Statistics of Indiana High Schools Superintendent W. H. Sanders

Bibliography of Secondary Schools Superintendent J. A. Carnagey

FRIDAY A. M.

Discussion of High School Course of Study—

State Superintendent F. L. Jones . 30 Min.
Superintendent B. F. Moore . . . 15 Min.
Superintendent Noble Harter . . 15 Min.
Superintendent C. N. Peak 15 Min.

General discussion.

FRIDAY P. M.

Science in the High School—

Doctor Stanley Coulter 45 Min.
Superintendent J. W. Carr 15 Min.
Superintendent R. A. Ogg 15 Min.

General discussion.

History in the High School—

Superintendent J. A. Wood . . . 25 Min.
Superintendent J. H. Tomlin . . . 10 Min.
Superintendent Edward Ayers . . 10 Min.

FRIDAY EVENING.

Art in the Public Schools—

Doctor W. L. Bryan 45 Min.
Professor J. L. Lowes 45 Min.

SATURDAY A. M.

What work should be done in the Township High Schools?—

Superintendent W. C. Belman . . 20 Min.
Superintendent C. F. Patterson . . 20 Min.
County Superintendent G. H. Tapy 20 Min.
Superintendent W. R. Snyder . . 20 Min.

NOTE.—In general discussions, each speaker will be limited to five minutes.

Chairman C. M. McDaniel announces that he expects to be able to add to the program two or three more good features.

AMONG THE NEW BOOKS.

The first examination of a copy of Herrick and Damon's *Composition and Rhetoric for Schools* is apt to impress one with the wide scope that the authors have attempted to cover. Instead of being a fault, as it might seem at first, it simply widens the period within which the book may be used. It is evidently not intended that the students of any one year would complete it. The work might well be commenced in an eighth grade and continued during any year of the high school. A general outline of the treatment will best explain this.—Part I is a study in expression itself; choice of subject, selection of material, titles, development, vocabulary and the mechanics of the sentence and paragraph. Part II considers the various elements in usage, including a chapter on improprieties and another on faults and miscellaneous errors. Part III, devoted to diction, deals rather with common errors in diction than with essential elements of good diction, the latter receiving treatment in the next part, which treats of the rhetorical laws of sentence and paragraph. Part V treats of the whole composition, its structure, the various kinds, and literary laws. The order of development thus appears to be logical throughout. Especially rational is it to seek first to cultivate the power and encourage the habit of expression—what the authors call the constructive, stimulative side. There will be difference of opinion about the wisdom of using the abundance of bad English that is offered for correction, but each teacher will direct this feature in his own school. The excellent features are the scope and the logical arrangement. [Scott, Foresman & Co., 466 pages, $1.00.]

The Heart of a Boy, by Edmond de Amicis, is not a new book, being translated from the 224th Italian edition, but the present edition is new and is specially prepared as a gift book. It is attractive and well made, containing thirty-two full page half tone engravings besides numerous other illustrations. The book gives the journal of a school boy of the third grade in an Italian school. The first interest for American boys will lie in the peculiar differences between Italian and American schools. The relations between pupils and master, between children and parents, and among the boys themselves are shown in such a variety of ways as to offer a very complete picture of one phase of Italian life. There are frequent letters to the boy from his father, skillfully arranged so as to give fine sketches of historical characters like Cavour, Garibaldi, Humbert and others, or else containing appeals to patriotism, goodness and manhood. There are also letters from mother and sister which are more affectionate and tender. The reader gets to know the school as if he were there, and to feel a vital interest in the welfare of each pupil. The very large circulation of the book in Italy marks it a classic there, and bespeaks for it an interest which will make it equally popular in America. [Laird and Lee, Chicago., 290 pages, gilt top, boxed $1.25.]

Here is the happy medium—*Webster's Collegiate Dictionary*. As the title suggests it occupies a place between the high school or academic editions and the unabridged. It is admirable in every way: so complete that it will answer the question in 99 cases out of 100, so moderate in price as to come within the means of thousands of people who could not afford the complete work, and so convenient that no one will defer looking up words because he has to get up to go to the dictionary. This combination will surely place the new form in great demand. Besides 948 pages devoted to the dictionary proper there is an extensive introduction relating chiefly to pronunciation and spelling. The appendix of over a hundred pages includes a pronouncing glossary of Scottish words and phrases, a vocabulary of rhymes, a vocabulary of proper names, a table of Greek and Roman deities and heroes, popular quotations and phrases from foreign languages, etc., etc. When not only students but professional and business men realize that a book so easy to handle is both comprehensive and authoritative none of them will wish to

work without a copy. [G. & C. Merriam & Co., Springfield, Mass. with reference index, cloth, $3, sheep, $4, half morroco, $5.]

Among the valuable professional books for teachers which are coming so fast from the publishing houses *Educational Aims and Educational Values* by Paul H. Hanus of Harvard deserves to rank high. Professor Hanus has evidently thought out in a clear manner the needs of the schools, or rather the needs of the pupils and his suggestions as to what, in a course of study, is best calculated to meet these needs are both clear and direct. He believes that *interest* is fundamental, that the work of the elementary schools should be complete as far as it goes, and that the same should be true of the secondary schools and the colleges. Each should prepare, up to the pupil's largest capacity, for complete living. This involves the encouragement and development so far as possible of the pupil's dominant interests, leading him to self-revelation. Besides five lectures devoted to aims and values there is one on preparation for teaching mathematics in the high school, one on the study of education at Harvard, and one on Comenius. The book is worth owning. [The Macmillan Co., 211 pages, $1.00.]

One of the best aids to experiments in chemistry is a *Laboratory Manual* prepared by H. W. Hillyer of the university of Wisconsin. Like most manuals of its kind each right hand page is left blank for notes. The book is written for college students, but is so graded as to be adapted to beginners, or to those who take up the study with some preliminary knowledge of it, or to still others who pursue the study beyond the required limits. The introductory chapter on "Manipulation," with directions to the student will be found especially helpful to beginners. The text is very clear, the cuts are ample and suggestive, and the page is large enough for copious records of results observed. [The Macmillan Co., 90 cents.]

In a group of six lectures by Dr. Hugo Münsterberg, the first, *Psychology and Life*, gives title to the volume which contains them. The author begs indulgence for what he fears may be shortcomings in the language of a beginner in English, but the reader finds after all that it would not be easy to express even the purpose and scope of the book more clearly than Dr. Münsterberg himself has in his preface. The chief aim, as he says, is "the separation of the conception of psychology from the conceptions of our real life. . . . A scientific synthesis of the ethical idealism with the physiological psychology of our day is my purpose. . . . Psychology is not to interfere with the conceptions of life." His lectures are avowedly "unamusing," and he declares that he does "not want to entertain." The careful reader will be ready to accept this last assertion, for the book is essentially a book for the student. It is one that yields more upon the second reading than upon the first. There is no skimming of surface but rather a direct probing into the deepest things of life. We feel that we are with a master, and though we may not assent to all his propositions at first, even if we do so at all, yet the lectures are decidedly stimulating. They presuppose some knowledge of philosophy. We must know what the author means when he says "Whatever is thought as existing can not have reality." We must accept, for the time at least, his assertion that only the will is real, and that even this "does not exist either as a substance which lasts or as a process which is going on." He condemns materialism as wholly wrong and lets us know early in the book his belief that only the ideal can be true. It is this idealism, as the expression of will-relations, which he strives to isolate, and with which he maintains psychology has no concern. "This world of not existing but valid will relations is the only world which history and society, morality and philosophy, have to deal with. . . . Our life is will." Dr. Münsterberg acknowledges, however, a place and function for psychology. It is not its use but its misuse that he objects to. He wants every high school teacher, at least, to know the principal mental facts. "All should know the general facts of association, attention, apperception and conception." He would "exclude from the school the relations of psychology to the details of brain physiology and the whole of pathological psychology, and above all child psychology." These things, he thinks, belong to the student of education, and their place is the psycho-educational laboratory. It will be difficult for many readers to understand the author's terminology, but some study will be repaid if it leads us as teachers to get a clearer view of the proper function and the true place of psychology. [Houghton, Mifflin & Co., $2.00.]

The study of physiology as a preparation for an intelligent and practical knowledge of the laws of health is the main purpose in *Advanced Lessons in Human Physiology and Hygiene*, by

Winfred E. Baldwin. The book is an improvement in several respects over some of the older physiologies. It goes somewhat into the elements of histology and biology, and devotes a larger proportion than is usual to the important matter of practical hygiene. At short intervals there are lists of questions which serve as reviews, and contain also suggestions for further study or for practical applications. Comprehensive but not technical the book is a desirable medium between the extensive treatise on the one hand and the superficial outlines on the other. [Werner School Book Co., 400 pages, 80 cents.]

Dr. Ruric N. Roark has followed his first book on psychology with a second which he calls *Method in Education*, an attempt, as the author says, "to develop in detail the applications of psychology in the work of teaching." The reader's sympathy is enlisted when he finds on the very first page "Formal education is to make not only men and women of cultivated intelligence and sound character, but men and women who shall be equipped in both physical health and moral strength to sustain that character against the stress and strain of active life, and to apply their intelligence to the practical bread and butter affairs, as well as to the spiritual things, of a complex civilization." Dr. Roark discriminates carefully between methods and method, and his work is a clear application of the latter as principles of psychology to the various phases of teaching. The great value of the book to teachers is in the detail with which the principles are studied in reference to each subject. This makes it specific and usable. [American Book Co., 348 pages, $1.00.]

The author of *Elementary Studies in Chemistry*, Joseph Torrey, Jr. of Harvard, has prepared his book with the conviction that chemistry has never been assigned its real value as a disciplinary study, and that it has suffered severely from what he terms "the irrepressible wave of laboratory madness." His work is an evident attempt to make chemistry more available for elementary work in science and to correct some of the abuses in laboratory practice referred to. His plan embraces sixty-two brief lectures, each a unit in itself, and each followed by directions for suitable laboratory work. The term "elementary" in the title should not be understood as suggesting a "sixteen week course." There are nearly 500 pages, and enough work for a year or more. [Henry Holt & Co., New York.]

The latest volume in the excellent "New Modern Language series" bears the title *Cinq Histoires* and includes Claretie's *Boum-Boum*, Dumas' *Entree dans Le Monde*, Maupassant's *La Parure*, Daudet's *La Chèvre de M. Seguin*, and Maistre's *Les Prisonniers du Caucase*. The editors, Méras and Sterne, announce that this is intended for students who have read the earlier books in the series, and that this is the introduction to real literature. As teachers themselves, they realize that this is the stage at which students easily abandon the study of the language, and hence these selections are chosen because they are especially interesting. There is a biographical note for each of the five authors. The vocabulary is ample. The text of this series needs no commendation. [Henry Holt & Co., 152 pages, 80 cents.]

The mere mention of the "White House Cook Book" carries with it suggestions of everything that is appetizing and savory and dainty. To the skill and knowledge which Mrs. F. L. Gillette brought to the preparation of that work she has added ten years of practical experience, and the result is *Mrs. Gillette's Cook Book*. She exhibits no unmatronly modesty in saying that this book embodies the experience of fifty years of practical housekeeping. Simple, practical, reliable, are qualities that the author claims for it—more American than French, and adapted to use in most American homes. The number and variety of recipes is very large, but there is much other interesting matter—how to lay table and serve a dinner, the carving and selection of meats, choice of vegetables, methods of preserving, diet for invalids, items for the toilet, table etiquette, a glossary of terms used in cooking, kitchen and laundry outfits, menus and so forth. The book contains several colored plates and a fine full index. Teachers' wives, mothers and sisters will all become benefactors by owning and heeding the valuable precepts on health and food here offered. [The Werner Co., Akron, O., 605 pages.]

As the last of a three-book series of text-books on the English language, Professor E. Oram Lyte of the Millersville (Penn.) Normal School, has prepared an *Advanced Grammar and Composition*. The first impression upon looking through it is that it includes in its scope more or less that properly belongs to rhetoric. Indeed, the author states it is intended to meet the requirements of high schools, academies, and normal schools, in all of which a somewhat complete course of rhetoric may be assumed. Some of the excel-

lent features are its simplicity, clearness, analysis, recognition of word, phrase and clause as all subordinate to the sentence as the unit of expression, and of all language as the mere expression of thought. Dr. Lyte maintains that we are all wrong in objecting to exercises in "false syntax," and hence he finds a legitimate place for them in his book. [The American Book Co.]

Etta Austin Blaisdell and Mary Frances Blaisdell have prepared a second reader which they call *Child Life in Tale and Fable.* The name suggests the contents, but it remains to say that the selections appear to have been very carefully chosen. The stories of "Little Red Riding Hood," "The Pied Piper," "The Ugly Duckling," and "King Midas" are the kind which awaken a real fondness for the right kind of literature. There is also quite a group of favorite poems for children by Stevenson, Longfellow, Jean Ingelow, and Tennyson. The whole collection is one of the best available for the second reader grade. [The Macmillan Co., 35 cents.]

Another valuable report, that will be of special interest to teachers of history, is *The Study of History in Schools.* It embodies the work of the Committee of Seven, as reported to the American Historical Association. The committee has been at work since 1896, and, embracing, as it does, seven very competent persons, their conclusions ought to have great weight. They set themselves the task of discovering the actual situation, and of suggesting, from that which seemed most helpful in spirit and tendency among the teachers of the country, a plan that would lead to wider agreement and to a more unified course. In their investigations they found a good deal of encouragement in the way of improved methods of study, a growing use of libraries, and frequent assignment of special topics. The committee emphasizes the need of thoroughly equipped teachers "who have received instruction in method, and are versed in the art of imparting information with due regard to the pupil's age and degree of mental advancement. The committee seems to have looked at the subject from all sides, and, as stated above, its conclusions are exceedingly valuable. The low price of 50 cents places it within the means of every teacher of history. [The Macmillan Co.]

When Edward Eggleston wrote the story that made him famous he pointed out a rich field for the novelist, and it is really remarkable that so few writers have sought to cultivate it. *Rolinda,* which has for its sub-title *A Tale of the Missisinewa,* is quite suggestive of the older story, being a "hoosier" product, and describing a typical "hoosier" community in which there are several native characters, with one or two exotics. The teacher is one of these and her school is the center of interest. The other is "Neighborhood Scottie," who most impresses her personality upon the school and is in turn most transformed by it. The native characteristics are well conceived and cleverly portrayed. The naming of successive issues from the same family Peter and Repeater, and Kate and Duplicate, are examples of a straining after effect that scarcely improves the story. The power of moral courage and firmness in subduing an unruly school are well shown. The inevitable love story lends a color of sentiment and romance. R. L. Whitson, the author, and Miss Olive Rush, who furnishes the illustrations, are both residents of Indiana. [The Champlin Press, Columbus, Ohio, $1.50.]

The presidents of our large universities are justly regarded as the leaders in educational thought. Whenever they speak they are expected to say something, and as a general thing they do say something. The public utterances of a university president represent his best thought and they are read and carefully weighed by the rest of the world. Such occasions as commencements, educational conventions, founding of new institutions, bring together people of varied interests, and an address which will appeal to them all must be of a high order. We have in this country a number of men who are capable of setting the pace in educational thought and to whom we look for guidance. One of the recognized leaders is President Daniel Coit Gilman of Johns Hopkins University. President Gilman has done much for higher education. What he has written is considered of large value. The Century Company, New York, has done the public an actual service by the publication of the addresses that President Gilman has made from time to time under the title of *University Problems in the United States.* These addresses deal with the educational problems from the writer's point of view and are out of his actual experience. The man's large personality makes them entirely worth while. We have found them a great source of inspiration. In addition to the papers bearing directly upon those institutions with which President Gilman has been identified, the discussion of "University Libraries," "Higher Education in the United States" and "The Proposals for a New University in Washington" will be found of value.

Professor Frank H. Hall has worked out another series of arithmetics which he calls *The Hall Arithmetics*. In his former series there were three books; in this there are two, the "Elementary" and the "Complete." The success of the former series appears to have justified the same plan in the new, namely a spiral advancement in which the pupil at each recurring tenth page comes in contact with the same principle, only on a higher plane. For example, on page 17 of the advanced book the pupil is introduced to percentage. There are two pages of this, and then no more until page 27. Throughout the book, on each tenth page, this subject recurs. In the same way the subject of decimals, commencing on page 13 is found on 23, 33, 43, etc.; and miscellaneous problems on 20, 30, 40, etc. There are seven such groups. This affords a continuous review at short intervals without turning back, and turns the pupil's attention continuously away from mechanical processes to the imaging of magnitudes, which is the fundamental idea in the series. If the theory is true that a child's education should be always a rounded whole, complete at any stage, so far as it has gone, then these books mark a most desirable improvement in method in arithmetic. [Werner School Book Co., 240 pages, 35 cents; 448 pages, 60 cents.]

A companion volume to *Uncle Sam's Soldiers* noticed in these pages in the September issue is *Our Navy in Time of War* by Franklin Matthews. It seems superfluous to bespeak interest for a book with such a title, especially from young Americans. But if the cultivation of interest were necessary the means would be found in the sixty-five illustrations, and the fine list of chapter subjects. Incidental to the story of our navy is a large part of the stories of the civil and the Spanish wars. So we find a chapter on "The Famous Monitor," one on the "Alabama and Kearsarge Fight," one on "Queer Boats Used in the Civil War," one on "Dewey's Victory at Manila," and one on the "Battle Near Santiago." It is an admirable boy's book, combining interest and instruction. [D. Appleton & Co., 275 pages, 75 cents.]

A TEACHER'S VALUE TO THE PUBLIC.

"What the teacher is counts for much more than what she knows. A love of children, unlimited tact and infinite patience are the necessary natural endowments," writes Caroline B. Le Row in the September *Ladies' Home Journal*. "Of course, the ability to teach implies the possession of an education, though no amount of education alone can make a good teacher. While all teachers must know more than they teach, the power to impart to others is the important matter, and the one in which tact or ingehuity is absolutely the prime requisite. Moreover, she should be personally a social, intellectual and moral force in the community. The physician and the clergyman have immense opportunities for this uplifting of humanity, yet their advantages are small when compared with those of the teacher, which are practically unlimited. Encouragement and satisfaction in this field of labor never can be dependent upon results, for it is seldom that the teacher is permitted to know what the years of maturity owe to faithful care of the youthful days. The teacher's time is always one of seed-sowing, never of harvest.

THE ELEMENTS OF HUMOR.

Of the two ingredients of humor which Thackeray mentions, the first, love, is that which gives body, says Samuel M. Crothers in the September *Atlantic;* the addition of wit gives the effervescence. The pleasure of wit lies in its unexpectedness. In humor there is the added pleasure of really liking that which surprises us. It's like meeting an old friend in an unexpected place. "What, you here?" we say.

This is the kind of pleasure we get from Dr. Johnson's reply to the lady who asked why he had put a certain definition in his dictionary: "Pure ignorance, madam."

The fact is that long ago we made the acquaintance of one whom Bunyan describes as "a brisk young lad named Ignorance." He is a dear friend of ours, and we are on very familiar terms with him when we are at home; but we don't expect to meet him in society. Suddenly we turn the corner, and we see him walking arm in arm with so great a man as Dr. Samuel Johnson. At once we are at our ease in the presence of the great man; it seems we have a mutual acquaintance.

Another element in real humor is a certain detachment of mind. We must not be afraid, or jealous, or angry; in order to take a really humorous view of any character, one must be in a position to see all around it. If I were brought before Fielding's Squire Western on charge of poaching, and if I had a pheasant concealed under my coat, I should not be in a position to appreciate what an amusing person the squire is. I should be inclined to take him very seriously.

The small boy who pins a paper to the school-

master's coat tail imagines that he has achieved a masterpiece of humor. But he is not really in a position to reap the fruits of his perilous adventure. It's a fearful and precarious joy which he feels. What if the schoolmaster should turn around? That would be tragedy.

Now, neither the small boy nor the schoolmaster gets the full flavor of humor. But suppose at that moment an old friend of the schoolmaster happens to look in at the door. His delight in the situation has a mellowness far removed from the anxious ambiguous glee of the urchin. He knows that the small boy is not so wicked as he thinks he is, and the schoolmaster is not so terrible as he seems; in fact, that only a little while ago he was up to the same pranks he now finds so reprehensible. So, from the assured position of middle age, he looks upon the small boy that was and the small boy that is, and finds them both very good,—much better, indeed, than at this moment they find one another.

EDUCATIONAL, LITERARY AND GENERAL ITEMS.

J. B. Royce will have charge of the New Marion (Ind.) schools this year.

The superintendency at Bluffton, Ind., goes to Professor Wirt of the Greencastle High School.

The schools at Monroeville, Ind., will be in charge of H. H. Niekamp during the coming year.

F. W. Weck, class of '98 I. S. N. S. is elected assistant principal of high school of Washington, Ill. He has already begun work.

M. C. Jensen, who has been studying botany with Dr. Coulter at Lake Forest and Chicago university, has accepted the science work in the Academy at Ridgeville, Ind.

The Annual Boyd County Teachers' Institute was held in the new Central High School building in Ashland, (Ky.) Superintendent Weaver of Paris, Ky., was the instructor.

Mrs. Ella F. Young, formerly a district superintendent in Chicago, will be associate professional lecturer in pedagogy in the teacher's college connected with the University of Chicago.

Miss Rose Cox has been elected as an extra assistant in the department of psychology and method at the Indiana State Normal. Miss Anna C. Keating becomes an assistant in the library.

Dr. William P. Kane begins his administration as president of Wabash College October 1. The retiring president, Dr. George S. Burroughs, takes a chair in the theological department of Oberlin.

Professor Isaac E. Neff, superintendent of the Portland, Ind., schools during the past year, goes to Kankakee next year as principal of the high school in that city. His work at Portland is highly commended.

The new manual of the Irvington schools has on the front page the cut of a fine new building just erected to replace the one burned last year. Superintendent Otis G. Stanton and his assistants are well equipped for a good year's work.

Miss Gertrude LaCroix, who has been teacher of languages for the past four years in the Ashland (Ky.) High School, has resigned to accept a similar position at Chillicothe, O. Her place has been filled by Mr. Fritz Hagen of Beloit, Wis.

Superintendent W. F. Byrket of Henry county, Ind., announces that a canvass of his teachers shows three-fourths of them in favor of the vertical system of writing. He desires all township and village schools to use this system to avoid frequent change.

Professor J. J. Schlicher of the Latin and German department at the Indiana State Normal has leave of absence for one year and will study in Europe. Miss Elizabeth A. Rose, assistant, will have charge of the department while Mr. Schlicher is absent.

A clear announcement to teachers and school officers in Ripley county regarding the purpose and requirements of the township institute shows that Superintendent Charles S. Royce has the interests of the schools at heart and the work well organized.

The vacancy created at Purdue University by the resignation of Professor A. W. Duff from the department of physics has been filled by the appointment of Dr. E. S. Ferry, a graduate of Cornell, and later a student at Johns Hopkins and the University of Upsala.

Dr. James Canfield of the Ohio state universty went some months ago to the library of Columbia university at New York. Dr. W. O. Thompson of Miami university succeeded him, and now Dr. David S. Tappan of Portsmouth, Ohio, succeeds Dr. Thompson as president of Miami University.

The teachers of the fourth congressional district, Kentucky, hold their sixth semi-annual meeting at Beaver Dam, October 19 and 20. Judging by an extensive program, a copy of which has been received through the kindness of the president, S. C. Stevens, the meeting will be a very profitable one.

The Southern Indiana Superintendents' Club will hold its annual meeting at Shelbyville, October 19 and 20. Dr. Burris O. Jenkins will lecture on the evening of October 19. Superintendent Tomlin is arranging for a full attendance and a good time. The full program was not at hand in time for insertion.

A report of the LaGrange county institute, appearing in one of the local papers indicates that the meeting this year was an unusually good one. Professors McBeth and Baer and Dr. Burroughs were the principal instructors. There were several entertaining features distributed among the lessons, so that the week was enjoyable as well as profitable.

An examination of the manual of the Columbia City public schools leaves no doubt that the superintendent, C. L. Hottel, and his fine body of assistants are working for the good of the schools. The course of study is larger than either the commission or even college entrance requires, and is designed to benefit especially the large majority whose education ends with the high school.

The superintendent who prepares for his teachers a twenty-five page manual on such a subject as nature-study, defining its value and scope, and indicating the general field and outline for each grade, has a right to expect large results. Moreover, the work thus outlined is likely to have something like unity. Such a manual has been prepared by C. M. McDaniel of Madison, Ind., for his teachers.

The *Rockville Republican*, after speaking of the large enrollment in the Rockville schools and of various improvements made during the vacation, says "There are other new features which bespeak advancement of the schools and the sympathy of those in charge with progressive ideas of education." Such appreciation right at home speaks well for Superintendent Thornton and his corps of assistants.

In addition to a comprehensive statement regarding the course of study the manual of the Redkey, Ind., schools includes such features as county, township and city officers, a directory of the business men and women of Redkey, and other features well calculated to establish an interest between the school and the rest of the community. W. D. Chambers continues as superintendent, and Clyde E. Wilson is principal of the high school.

The many friends of Thomas E. Sanders will rejoice with him in his recovery from a long and serious attack of typhoid fever. In consequence of this he has been advised to defer his plans for a year of study and engage in temporary work that will require more active physical exercise. The Jackson county teachers did both themselves and Mr. Sanders credit by expressing, during their institute, their appreciation of his services to the schools of the county.

The following note was received from Professor John A. Miller, after his article on another page was printed: "According to the computations made under the directions of G. Johnstone Stoney, the meteors will probably fall thickest about midnight of November 15. It is true, however, that they fell thickest on the morning of November 14 last year, and that two elements of uncertainty enter into these computations; hence the prediction can be offered only with reservation.

The Indiana state board of education has decided that the writing books furnished by Eaton & Co. under their contract with the board do not meet the specifications. However, the distribution has been made to most schools throughout the state and the matter meanwhile has been referred to a committee of the board, consisting of Messrs. Stone, Stott, Hester and Jones. This committee will report in November. In Indianapolis the handling agents refused to distribute the books without a specific order from Superintendent Goss, but this Mr. Goss declined to issue. It is understood that Eaton & Co. guarantee to make everything satisfactory.

The interpretation which Superintendent F. L. Jones places upon the school book law is causing considerable discussion. The poorer classes upon whom the cost of new books is a burden would have the changes come in gradually. Such men as superintendents Hester, Study and Carr take this same view and think the law itself justifies the gradual change. Superintendent Jones says the law is ambiguous, but maintains that it "is undoubtedly far more desirable and beneficial to order the changes made at once. Where the change is made gradually there is endless confusion and the work of the schools is greatly retarded. It is a much better plan to make the change at once."

Reports of increased attendance are received from the Tri-State Normal at Angola. President Sniff is on the alert for whatever will improve his school.

The friends of the Eastern Indiana Normal University have been surprised at the unexpectedly rapid development of that school. President Kumler devotes his full time to its management and has called about him teachers of

rare ability and experience. It is safe to predict that the initial success of the institution will continue and grow.

President H. B. Brown of the Northern Indiana Normal School states that notwithstanding the smallpox scare during the summer the attendance now registers 142 more than a year ago at the same date. When it is remembered that last year was the largest and best in the history of the school the present increase is a sure mark of Valparaiso's prosperity.

Mr. Charles A. Bennett of the Bradley Polytechnic Institute, Peoria, Ill., announces a new periodical for October, to be called the *Manual Training Magazine*. It is to be published quarterly, and, as the title suggests, will be devoted to manual arts in American schools. It is to come from the press of the University of Chicago, and the list of names showing persons interested indicates that the effort will be carefully made.

Messrs. Small, Maynard & Company's preliminary announcements for the autumn include some twenty-five volumes. In the Beacon Biographies they will issue Mrs. James T. Field's Life of Hawthorne; a Life of Thomas Paine, by Ellery Sedgwick; of John Brown, by Joseph Edgar Chamberlain; of Aaron Burr, by Henry Childs Merwin; and of Frederick Douglass, by Charles W. Chesnutt,—the volumes to appear at intervals during the next three months.

The Central Normal College at Danville, Ind., began its twenty-fourth vear September 5th with a good attendance. The regular classes are large, even above the average. At first there was much sickness in the faculty, but now all are at the post of duty except Professor Hargrave, and he is improving. The college will do a strong line of primary work this year under the charge of Mrs. Olcott. Professor Kinnaman will spend the year in study. His work will be done by Mrs. Olcott, Professor Norman and Professor Spillman.

The periodical *Arts for America* has taken up the work of publishing, semi-monthly, a group of ten reproductions of famous art works intended for use in clubs and schools. These groups may be purchased at ten cents each, or at $2.40 subscription price per year. Both publications come from the Central Art Association of America and are designed to promote art among the people. The purpose is a most worthy one and with the present large interest in art among the schools the publications will be of much interest to teachers.

THE PURPOSE OF EDUCATION.

[These extracts are from a paper read by G. B. Morrison, Kansas City, before the N. E. A. at Los Angeles.]

The objects of life are happiness, contentment and usefulness to others. All of these depend upon our ability to adapt ourselves to the requirements of physical, moral and intellectual law. The most that can be done by a school is to give the pupil the power of self-help. Life demands of the young graduate that he be able-bodied, quick in adaptation, and willing to take hold of the first useful employment that comes to hand. He should possess a love for labor and find his chief enjoyment in overcoming difficulties. He must be ambitious, upright and honorable, and free from vicious habits. His mind should be trained into sympathy with modern things and with modern problems. He must be able to answer the question: "What can you do?" as well as "What do you know?"

High schools fail to prepare for life to the extent that they treat language, as anything else than a vehicle of thought, drawing as anything but a sort of universal language, and mathematics as other than a device for measuring quantity. The thought side in our schools should be strengthened by using fewer books and more laboratories; the expression side by the constant practice of portraying daily experiences by words, drawings, and figures. The thought and the industrial sides of education in our schools need strengthening by training in the manual arts. Our schools would be improved if they taught more labor and less discussion of the labor problems. It is the office of the high school to put the pupil into full possession of his best thinking and executive powers, and something is wrong with a college that requires a different preparation.

HOLIDAY EXCURSION TO HAVANA.

Superintendent Patterson of Edinburg, Ind., will conduct a special party to Havana, Cuba, leaving all points in Indiana on Saturday, December 23, 1899. Stops will be made at Nashville, Atlanta, Montgomery, Jacksonville, St. Augustine, Key West. A side trip will be made by water from Havana to Santiago. Matanzas by rail. For special information address

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THE INLAND EDUCATOR, from the beginning, has directed its energies towards helping the district and grade teacher. Its aim has been to be a working companion, to stimulate without weakening. In furthering that aim it has arranged several series of articles which are practical in the truest sense of that term. But perhaps the fullest expression of that aim was in the determination to print and distribute as an extra issue of THE EDUCATOR a handbook on Reading and Literature in the grades, designed especially to accompany the Indiana readers, just revised by Professor Clark of Chicago University. Since it was wholly in addition to what we promised our subscribers, we felt wholly free to base it upon a particular set of readers, especially when it is remembered that more than 11,000 of the teachers of Indiana are on our subscription list. However we purpose to send this extra number—the lucky thirteenth—to *all* our subscribers, as it will have much of value for all, whatever ideas of reading may prevail where they teach. Only one condition attaches to securing it, viz., *a paid up subscription.*

The Handbook will be ready about October 15th and will then be mailed to every subscriber whose subscription for this year is indicated as paid on our books. It will be mailed to all others as they pay. We make this matter clear because we have received several letters from subscribers who do not seem to have read our announcements in which the conditions given above were clearly stated. Again, copies of this extra issue will not be sold singly. The only way to secure a copy is to subscribe for THE INLAND EDUCATOR. We are gratified at the great interest shown in this thirteenth issue, but must ask all to remember that there is a vast amount of detail work to be done in connection with such an enterprise and that it is necessary to be as accurate as possible in its prepartion. Please note then: *This thirteenth number is furnished free to our subscribers in addition to the twelve regular issues; that it is, however, to be mailed to paid up subscribers and to all others as they pay; that it will be ready about the 20th of October.*

This handbook will be quite unique in its plan and scope and will be of the greatest value to every teacher and student of literature.

The's as much human nature in some folks as th' is in others, if not more. . . . I reckon it's a sight easier to have faith on meat an' potatoes 'n it is on corn meal mush.—*David Harum.*

THE INLAND EDUCATOR.

A JOURNAL FOR THE PROGRESSIVE TEACHER.

WALTER W. STORMS, Editor.

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NOVEMBER, 1899.

This month is dear to grave and gay,
Because it brings Thanksgiving Day,
When those who have been scattered wide
Assemble at the fireside
To render thanks for being blessed,
And have a dinner of the best.
—Selected.

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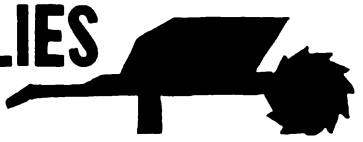
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VOL. IX. NOVEMBER, 1899. No. 4.

Meteors November 13. If any of our readers have not yet read Mr. Miller's article on meteors in the October issue they should do so without fail before the shower occurs. The spectacle is likely to be worth seeing, and to most of us the one event of its kind that we shall ever see.

* * *

Education in Our New Possessions The September number of the *Educational Review* contains a reprint of Commissioner W. T. Harris's N. E. A. address "An Educational Policy for our New Possessions." In view of the emphasis that we in America place upon education as a qualification for the enjoyment of free institutions and the largest living it seems of the utmost importance that plans for the education of our new people be laid with the greatest care. Dr. Harris has shown his usual sagacity in proposing a plan that is simple and practical, and that at the same time may be put into immediate operation. The essential features are, (1) the exercise of military authority towards the re-establishing of all educational institutions; (2) the appointment of expert supervisors to inspect the schools and train the teachers in the most advanced methods of instruction; (3) the gradual introduction of English through Spanish-English teachers. So much for the mechanics of the plan. Simple as it may be Dr. Harris well understands that the problem involves more than the rudiments of mere book learning. "We must emancipate them from tribal forms and usages and train them into productive industry and the individual ownership of land. . . . We have a right to work for the enlightenment of all peoples and to give our aid to lift them into local self-government. But local self-government can not exist where there is no basis of productive industry and book learning. Here we have the answer to our question: What is the right one civilization has to substitute itself in the place of another civilization already existing? . . . The school is to be a great feature in the government of the new possessions. All the inhabitants must be educated and not the few alone. . . . That education should be such as to enable the inhabitants to develop to the full the resources of their islands."

* * *

The Indianapolis School Board. At the regular election on October 10 the citizens of Indianapolis chose their first school board under the new law. Among the novel features of this law is the provision by which candidates for a position on the board are nominated. "Each candidate shall be proposed in writing by not fewer than two hundred householders of said city. No more than one candidate may be named in any one petition, and no person may sign more than one petition for any one election." There is no division of the city into districts for this purpose, but the five nominees who receive the highest number of votes are to represent the city at large. They serve without pay and each member takes an oath that he will not become interested directly or indirectly in any contract with or any claim against the city and "that he will not be influenced during his term of office by any consideration of politics or religion or anything except that of merit and fitness in the appointment of officers and the engagement of employes." This seems like a step in the right direction. It takes the nominations out of ward politics, and if the people will see to it that only men of integrity are chosen it lifts the appointment of a superintendent, too, from politics to fitness. In the election just held the popular interest was intense. Divisions were not along political lines but depended rather upon the attitude of the respective candidates toward the present superintendent, Mr. D. K. Goss. So far as can be judged by newspaper and other reports three of the five members chosen are opposed to and one is in favor of the reelection of Mr. Goss. One is

non-committal. The new board will be organized in January, 1900. At its second regular meeting, in April, it will elect a superintendent and a librarian for one year each. If either of these persons is reelected in the April following it will be for a period of four years. This feature of the law also commends itself as a step in favor of more certain office tenure.

* * *

The Chicago Schools. Since Superintendent Andrews was reelected for another year the educational world has believed that affairs in the Chicago schools would settle down to a smooth working basis. From present indications this may reasonably be expected. It was natural that the experiment of placing a university man at the head of a great public-school system was variously regarded, and the unrest which was so prevalent all last year, threatening to culminate in a general disorganizing, gave many an anti a chance to say "I told you so." However, the crisis was safely passed. Dr. Andrews still has his detractors but they are neither so many nor so bitter as they were. He has shown his ability to adapt himself to the work. It was inevitable that a man without experience in the actual administration of a large system of schools should make some minor mistakes. Moreover, the situation, politically, has been very hard. But if within one year it has been possible to place at the head of the Chicago schools a man of Dr. Andrews' capacity the 'storm and stress' of those months could well be endured.

* * *

Admiral Dewey. Ever since that memorable first of May, 1898, when our Asiatic squadron went into Manila bay the world has kept at least one eye upon the hero of that day, and no loyal American has ceased to regard him with an admiration that borders close upon hero worship. His homecoming, the demonstrations of the people, receptions, gifts, honors, have all combined to make him by far the foremost figure in America to-day. Congress has graciously given him the highest rank it can confer, and an enthusiastic nation would probably make him its president if he would consent to become a candidate. To us, his very unwillingness to do so seems to be one of the finest things about it all. It makes us feel that he is not posing, and that his ideal is a man who does his duty and does it well. This is the lesson that young Americans should learn from our enthusiastic reception of the hero of Manila. He saw his duty and he did it. The time and place for a decisive blow were at hand. As it happened, the man was there, too, and he was *ready*. This word expresses the difference between the commanders of the American and the Spanish fleets on that May-day. One was prepared; the other, with advantages mostly on his side, was not; and the result determined whether the opening note of the war should be defeat or victory.

* * *

The Music Department. In consideration of the large space devoted to a Thanksgiving exercise this month, and the use of music there, the regular material for the music department is held over until our next issue. We are sure the special program this month will be much appreciated.

* * *

Trusts. In the October issue we referred to the conference in Chicago that had met to consider the question of trusts. The results of the meeting are thought to be helpful. While the convention had no authority to act, there was free deliberation, no partisanship, no politics, some suggestions, and much education. A great deal has been since said regarding the suggestion of Mr. W. J. Bryan that it might be possible to limit the trust so that the right to do business in one state should not carry with it the right to do business in another without the other state's consent. The opinion that trusts are an evil was not held by all the delegates though all agreed that study and investigation of them are most desirable. It was agreed, too, that it would be better to deal with them outside of politics if possible. The presence of several prominent school men among the delegates is another indication of the growing regard for the opinion of men who, as teachers, make careful studies of public questions. Every instance of such giving of expert opinion advances also the general professional standard.

* * *

A Word to our Patrons. The close of the institute season is an appropriate time for publishers and editors to express to our many friends the grateful appreciation which we feel for their cordial support at the opening of the new school year. Notwithstanding greatly increased competition THE EDUCATOR has easily held its own, and in some localities there have been marked gains. This is reassuring. It gives us confidence in our plans and confirms anew our belief that the teachers of this north central group of states really desire an educational paper that stands for progress. It was this belief that first prompted the founding of such a journal. We

have maintained that teachers should keep before them by means of current literature as well as of books the theory, meaning and scope of education and that they should keep advised of the educational movement outside of their own immediate neighborhood. A firm grasp of the fundamental principles is like a balance-wheel to prevent undue acceleration under stress of passing influences or to carry us through periods of depression and doubt. Where good theories have been successfully worked out we like to point to the success, but with the caution that in education it is emphatically true that circumstances alter cases. THE EDUCATOR stands less for methods than for method, with a distinction such as Professor Roark makes in his latest book. Readers will believe that we are continuously planning for the best things. Kind commendation of the last three or four numbers are welcome assurance of a degree of success; but we shall still advance if we may continue to enjoy the same generous support as we have had in the past.

* * *

Dr. Andrews on Criticism In an address before the teachers of Chicago, October 21, 1899, Superintendent Andrews took occasion to speak of the criticisms that have been so freely bestowed upon teachers in general and upon the superintendent of the Chicago schools in particular. The reply was most dignified, though vigorous, and we refer to it here because we think some of the statements made are deserving of a wider currency. The address showed that Dr. Andrews looks at things with the comprehensive view which discriminates between the essential and the non-essential. In the first place he welcomes criticism and thinks it preferable to patrons' apathy or to such peace as might be enjoyed if the schools were cut off from the rest of the world by a Chinese wall. "Charges against us are sometimes just—therefore, of course, helpful. How the sincere teacher rejoices in all such! Unjust flings are good in a different way. I would rather suffer from mosquitoes than be a pachyderm. When otherwise of no use a captious critic keeps you awake." The call for a return to the old-time simplicity, "to the schools of the fathers" is attributed to a wrong conception of both the older and the modern schools. "The schools of the fathers have their merits, which I should be the last to disparage. They taught the art of strenuous effort which is a great attainment. But let no one make a fetish out of the old school. Its shortcomings were legion. . . . I do not underestimate the quality of accuracy in scholarship. Accuracy, according to Cardinal Newman's often recalled aphorism, is certainly a great part—not the whole but a great part—of a true education. Other things being equal the accurate scholar is the best. Yet it were inane to judge schools by this test alone. We are not set to make machines but men and women. A poor reader or speller or reckoner may in spite of these infelicities be educated gloriously to succeed as a human being. . . . I knew the old-fashioned school well, its merits and its defects. Its strength and glory nearly everywhere was its success with arithmetic. But I declare unhesitatingly that I never saw anywhere else so good arithmetic teaching as I have seen in Chicago." A strong plea was made for the teaching of morals—cleanliness in speech and thought, thrift, perseverance, veracity, the rights and laws of property, public spirit, regard for the aged, the feeble, the unfortunate. "For all practical purposes morality can be taught without dipping into religion, and all sects are becoming aware of this." The "fads" of drawing, music, sloyd, calisthenics, gymnastics are defended on six counts:—invaluable training for eye and hand; benefits to bodily health; production of ideas and idea-associations which would never originate otherwise, deepening and replenishing the mental life; widening the range and the power of the emotional experience and comprehension: promotion of will-power, initiative, self-control, courage, morality; best of all and more than all, generating faculty and making man an able and larger being. There are some sensible words about pedagogy, showing that somewhere between the theory which requires the teacher to strew the pupil's way with the flowers of *interest* ("the pedagogy of gush") and the theory which requires the pupil to work out his own salvation with fear and trembling ("the pedagogy of grind") lies the happy medium of teacher and pupil and good books working together in happy unison. The full address appears in *School News* for October 5, and is worth the time it will take to read it.

* * *

Boer and Briton. In a recent number of *The Outlook* there appeared an article on the Transvaal situation by Henry M. Stanley. It is a strong defense of the position taken by the British government, and from the jingo standpoint, as we would say in America, it makes out a good case for England. The gist of Mr. Stanley's argument is that the Boer is an obstructionist, that he stands in the way of the development of great mineral resources and that

this conservativism is prejudicial to the interests of Englishmen who have gone into the Transvaal to work the mines. It is true that the Boer government did establish hard terms of naturalization for foreigners, though they have plainly said that they do not desire the presence of the Outlanders and that they ought to leave the country if the laws do not please them. The Outlanders are in the majority, and the Boers clearly see that the granting of an equal franchise would mean the political extinction of the minority. In 1852 Great Britain recognized the independence of the Boers, who some twenty years before had crossed the Vaal to escape aggression when Great Britain annexed Natal, just as they had previously left Cape Colony for Natal. In 1876 Great Britain helped the Boers in a war with the natives and annexed the Transvaal but the Boers revolted and regained their independence by the decisive battle of Majuba in 1881. By the treaty then made, and by another in 1884, the claims of Great Britain dwindled to the right to be consulted in the foreign dealings and relations of the Transvaal. To this treaty the Boers wish to adhere. England claims that circumstances have changed, and that no nation which is so rich in gold and diamonds as the South African Republic has the moral right to isolate itself. Both nations have made large preparations for war. The Orange Free State will aid the Boers, and Hon. W. P. Schreiner who is prime minister and hence the chief executive of Cape Colony will do all he can to keep that province neutral. In England the protest against British aggression is very marked among the Liberal party. Men like John Morley and Frederic Harrison openly condemn Lord Salisbury and Mr. Chamberlain. It is hardly possible that the Boers would yield until well nigh extinguished.

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Formative Influences. Among the influences that are helping to give form, direction and value to all our educational work we must count most important the interest taken in it by men of high position and large influence. For a recent example let us refer to an article in the *Atlantic Monthly* for October by Chas. W. Eliot of Harvard on "Recent Changes in Secondary Education." One might expect from the president of a great university a learned discourse on some philosophical theme, or perhaps a defense of the classics or a plea for more science in a college curriculum. There is no doubt that President Eliot has clear opinions upon all such subjects, but when we find him speaking in a clear, straightforward way about the conditions and needs of secondary schools we recognize the breadth of view which he takes of education in general, and we have confidence in his judgment. This particular article is commended to all teachers who have access to the *Atlantic*. It is good for the primary teacher no less than the grammar and the high-school teacher. Dr. Harper of Chicago, Professor Hinsdale of Ann Arbor and Dr. Jordan of Leland Stanford are men who also take wide interest in public school matters. The teachers in the rural schools and the grades, the principals and superintendents, who are all closer to the work, see more clearly the complex and manifold needs of their individual schools. The teacher in the schoolroom working out the daily problems of the recitation, of discipline, of the care and direction of individual pupils has neither opportunity nor time to work out the large movements which will relate one part of the system to the other, correlating, harmonizing, unifying them. However, we are all interested in the wider view which shows us proportion and perspective and progress, and we are grateful to the careful thinkers who busy themselves with these things.

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The University of California. During the last decade the Leland Stanford Junior University has become well known as one of the great American schools, magnificently endowed, and well equipped in all the provisions for collegiate and university study. School people in Indiana and adjoining states have been particularly interested in it through its president, Dr. David Starr Jordan. The other great school on the Pacific coast is not so well known. Attention was recently drawn towards it by the selection of Dr. Benjamin Ide Wheeler as its president, and again now it comes into prominence by the award of what is known as the "Phebe Hearst Architectural Competition." The university was chartered in 1868, receiving from the United States a large grant of land overlooking the Golden Gate. Scattered about these grounds the university buildings have sprung up here and there with little regard for an artistic whole. At the suggestion of one of the instructors, Mr. B. R. Maybeck, the regents were asked to consider a project that would create an artistic and harmonious unity out of the scattered masses. It was decided to invite plans, the competition to be open to the world. Mrs. Hearst then offered to pay the cost of the competition and to erect two new buildings, one of which is to be a memorial to her husband. The number of plans submitted

was 98. The first prize of $10,000 was given to E. Bénard of France. $10,000 more was distributed among winners of the second, third, fourth and fifth prizes. The accepted plan gives an oblong form with rectangular arrangements, Mt. Holden with Lick observatory, being included at one end. In grandeur and architectural beauty the new university will rival the exposition buildings at the world's fair in Chicago, while their solidity and permanent character will give them a far greater interest. These two sister universities on the Pacific coast will make California one of the great educational centers of America.

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Brief Items of Current History. On the 19th of September the French cabinet held a council and recommended the pardon of Captain Dreyfus who had been resentenced by the court-martial to confinement for ten years. President Loubet promptly signed the pardon and Dreyfus was released before daylight on the morning of the 20th. A formal agreement was entered into that no appeal for revision shall be made to the military court. It is believed, however, that there will be an earnest effort to secure a complete and decisive vindication of the accused man. He desires not only his liberty but his honor.

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In the July issue of THE EDUCATOR reference was made to the board of arbitration then sitting in Paris to determine the Venezuelan boundary. The decision was rendered October 3, and is in the nature of a compromise. One important point gained for Venezuela is her control of the mouth of the Orinoco river. The boundary line had been in dispute since 1841, when England ran what is called the Schomberg line. This line was never accepted by Venezuela; and when, a few years ago, gold was discovered, and England attempted to enforce the establishment of this line, the United States government held that this would be in violation of the Monroe Doctrine. The result was an agreement by both Great Britain and Venezuela to submit the question to arbitration. Meanwhile a revolution is in progress in Venezuela itself. This is not related in any way to the boundary question, but is simply one of those changes of power from one party or one leader to another which are frequently occurring in the Spanish-American republics.

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It is interesting to note that in several cases where educational bodies had resolved to suspend preparations for the Paris exposition such action has been reconsidered, and the work resumed. The pardon of Dreyfus is doubtless the chief cause for the reversal of opinion, although reflection has helped convince us that the attitude toward Dreyfus and the mal-administration of justice was not representative of the substantial element in France. The pardon subordinates the military to the civil power.

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On the 7th of October there was unveiled at the university of Virginia a bronze statue of Poe by the celebrated sculptor Zolnay. The occasion was one of much literary interest. There was a memorial address by Hamilton Wright Mabie and a poem by Robert Burns Wilson. The impression left by the numerous speakers and by letters from many eminent literary men was that Poe has been both misrepresented and misunderstood, and that his work is likely to gain in appreciation. Mr. Mabie thinks that Poe, alone of all our writers, was not the product of his time.

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It would be difficult to imagine anything more picturesque than the spectacle of President Kruger giving England 48 hours to withdraw her forces and prepare to leave South Africa. There can hardly be a question as to the result of a serious war between the two countries, but the Boers are both plucky and sturdy, and avowedly prefer annihilation to surrender. A state of war actually exists, but the extensive preparations which England is making will defer heavy fighting for some weeks yet.

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The system of wireless telegraphy was shown to be practicable during the yacht races off Sandy Hook, when Signor Marconi sent messages through the upper air from a steamer to the office of the New York *Herald*. This is certainly one of the great discoveries of the age.

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Order in the Schoolroom.

It is in response to a request that these few suggestions are offered on the subject of order. There are at least two valid reasons why there should be good order in the schoolroom and why this should be wholly under the teacher's control. One reason is that the work of the school may go on without interruption, and the other is that the pupil may learn the important lesson of subordinating himself to rightful authority for the common good. It is well that our ideals of what constitute good order have changed. The pin-drop standard is super-

seded by the wholesome air of quiet though not noiseless industry. Stillness is not necessarily order.

Now the key that will show the solution to nearly all problems in discipline is that one word, *industry*. Whether in school or out, work is the great antidote to mischief. To a teacher, then, who has had continuous trouble in discipline we would say first, examine your program with the greatest care. See at what times of the day the disorder is greatest aud note the exact quarter from which it comes. Disorder like good order is infectious. Suppose, for example, that your difficult period is the last one in the day, and that the trouble comes mostly from a class of bright pupils who will get their lessons for the next day at night, or perhaps during the first period next morning. It is quite possible that the simple changing of the program so as to give this class the closing period for recitation instead of study will solve the difficulty. Disorder is often the natural result of insufficient work. We should recognize the child's tremendous energy and the natural desire to expend it in almost continuous activity. First, then, examine your program and course of study.

Next, examine yourself. Col. Parker declares that nearly all cause of disorder resides in the teacher. This, as we remarked in the October EDUCATOR is rather hard on the teacher, but if there is truth in it we should set about the remedy by seeking the cause in the right place. Perhaps we are irritable; then we need more sleep and possibly a physician. Perhaps we come to our work without careful plans or with lessons not prepared; this means almost certain disaster. Perhaps we are not in sympathy with our work, teaching merely as a makeshift until something better turns up; in that case the remedy is both plain and imperative. Perhaps we are not qualified for the positions we hold; in that case, too, the remedy is plain, though we admit that very much may be done in the way of better preparation by the ambitious teacher while teaching. If you have had no opportunity for professional training make sure to read a few of the many good books on the nature of mind and mental processes, and on the best methods of teaching.

Careful examination of these two factors, namely the program and the teacher, and a readjustment if necessary will reduce most trouble to a minimum. You will then be able to devote yourself to the one or two persistent tough cases. You will have time to study them as individuals, their home life, their occupation out of school, their associates, their likes and dislikes. Then if you are tactful you will find a way to awaken interest and arouse sympathy. This done, the problem of discipline is solved; the school is no longer then a reformatory but a cheerful, busy workshop, where activity is not restrained but directed. To add a single remark to these general suggestions remember the great influence of school environment. Pictures, flowers, cleanliness, plenty of light and good fresh air are mighty aids to good order.

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A Thought For Thanksgiving.

It was Izaak Walton, we believe, who, in his own artless way, once said that every misery missed is an added blessing. The thought is homely and simple, as his thoughts were wont to be, but it is none the less true, and at this season appropriate for everybody. The book of common prayer instructs us to seek pardon for sins of omission as well as for those of commission. So blessings may come in the form of good bestowed or of evil withheld, and it becomes us to be thankful for some things that we are not or have not as well as for other things that we are and have.

Think, for example, of personal characteristics which some people possess; or rather let us think of them in the abstract lest we be found like the Pharisee thanking God that we are not as other men are. Under different circumstances of birth or environment we might have been conceited, vain, boorish, gross, discontented, brutal, coarse, cowardly, querulous, listless, prudish, haughty, boastful, dishonest, untruthful, fawning, quarrelsome, discourteous, peevish, crabbed, rude, sullen, sarcastic, spiteful, malicious, insincere, cruel, selfish, thankless, irreverent, calumnious, disloyal, mean, mercenary, vicious, intemperate, dissolute, indifferent to the interests or the welfare of others—Sad and long is the list of traits which we are glad and thankful not to own.

If famine, pestilence, earthquake, tornado have not come and left us desolate, this too is cause for gratitude. Indeed, in the very presence of calamity there is always some good left even though it be nothing more

than hope. Several years ago when Charleston was so rudely shaken by an earthquake Edwin Booth wrote to an old friend who was among the sufferers, enclosing with his letter a check for $1,000.

BOSTON, Sept. 1.—*My Dear Old Friend*: The earthquake horror reminds me that I have (or had) many dear friends in Charleston. I can't help all of 'em, but if the enclosed can relieve you and the dear ones use it. Bad as it is it might be worse. The Almighty loves us despite his chastisements. Be true to him. My little life has been a chapter of tragedies, as you know, but I have never despaired—never lost my grip of the eternal truth. 'The worst is not so long as we can say this is the worst.' Give my love to all old friends of mine, and assure them that though I may never see them again in the flesh they are vivid in my memory, wreathed with roses and red ribbons. Your old friend,

NED.

Not the least of the ills which we as teachers may rejoice to have escaped is that of ignorance. The old maxim "Where ignorance is bliss 'tis folly to be wise" has indeed grown venerable with age. It may still be true in some things that would affect our self-consciousness but in all that pertains to schools in America we may hope, and at the same time rejoice, that ignorance has had her day. The maxim no longer fits our land and our times. Intelligence and education bring in their train too many good things. They open the way to the more abundant life, whereof we are glad.

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Unifying Forces.

There is coming into sight a unified and definite system of education for the United States. We have talked of our school system ever since the establishment of free schools, but the most we have had is the simple principle that the state should offer to each child at least the elements of an education, and that it should be compulsory. There was little or no relation between the schools of one town and those of another. Even in the same city or town there have often been something like barriers between the grammar and the high schools. These examination barriers have made convenient stepping-off places and have invited many a boy to end rather than continue his school days. Within the high school itself there were various standards; one for the select few preparing for college, one for a larger minority who expected to end their school work with graduation from the high school, and almost anything for the majority who dropped out at various points along the way. The college doors swung outward. The whole course from grade one in the primary school to the end of a post-graduate course in the university was cross sectioned, and instead of being actually graded as the name would signify the transition from section to section required an unusual effort which deterred more than it encouraged. Let us not be understood as advocating a system in which everything is made smooth and easy. There is yet no royal road, and we are so constituted that we grow by striving, but the ascent should be continuous; progress should be steady, not spasmodic.

These defects are now well recognized. Better than this their remedy has been eagerly sought. It marked an epoch in the history of education in America when, in 1895, at the Denver meeting of the N. E. A., the discussion of a paper read by Professor William Carey Jones of the university of California resulted in the appointment of the Committee on College Entrance Requirements. The purpose of this committee was "to study the question of college entrance requirements, for the purpose of harmonizing the relations between the secondary schools and the colleges, to the end that the former may do their legitimate work, *as the schools of the people*, and at the same time furnish an adequate preparation to their pupils for more advanced study in the academic colleges and technical schools." It is not possible to give here an account of the deliberations of the committee, but their report, recently completed, after large study extending over a period of four years, is earnestly commended to all teachers who wish to broaden their views of the relative value of different subjects and their proper place in a high school course of study.

We believe, however, that the indirect benefits of the work of the committee have been as great as those which relate alone to college entrance requirements. "The fundamental work of the committee has been a formulation of the principles that are equally applicable to all subjects of instruction." In a comparison of values a close inquiry into the character and amount of work in any given subject was made, and specialists in each study were "invited to outline an ideal and also a practical course" in their respective branches. Naturally each body of specialists would think its own subject of first importance and so it was inevitable

that the outlines thus submitted should be more comprehensive than the ones in general use in most schools. To accept the increased time devoted to each study and yet not extend the time for the high school course was simply impossible. The only alternative was a smaller number of studies for each pupil, but greater thoroughness in those taken. To encourage this greater thoroughness and yet leave latitude for a wide range of options the colleges agree—some of them have and others will—that preparation in one study is worth as much as preparation in another, provided the effort in each case is approximately the same. As President Eliot says, "Harvard College proposes to count for admission any study taught in secondary schools to an extent which can fairly be supposed to cultivate in the pupils the peculiar mental capacity the study is fitted to impart." Other colleges are sure to follow.

The result is reached by concession on both sides and the plan is hence practically certain of general adoption. But another and a greater advantage that has grown out of such a careful investigation of comparative values is the conclusion that it makes less difference what is studied than how it is studied. Mental discipline, development, capacity are recognized as ends in education, and not mere knowledge as formerly. Hence it appears, to quote President Eliot again, that the interests of pupils who are preparing for college and those who are not are almost identical. This is a seed thought, and the principle may be applied at any stage of the whole course of study from kindergarten to university; the kind, the quality of training that is good for one class of pupils is good for others, and the best is none too good for all. Mental power is developed through the sciences for example, not less than through the classics.

When all colleges are ready to admit without examination students prepared in certain studies selected from a wide range of electives, when high schools meet the requirements by providing proper instruction from fully competent teachers, when the transition from the eighth grade to the high school is as simple as that from the seventh grade to the eighth, when the township high school for pupils in the rural districts becomes well established, when the kindergarten is open to all children, when it is effectively felt that education is not for information alone, but for power, we shall have a school system such as the world has never before seen. The achievement of all these ideals is in sight; and the hopeful thing about the tendency is that the dangers of a flat level of uniformity grow continuously less.

TALKS ON THE STUDY OF LITERATURE.—II.

By EDWIN A. GREENLAW, A. M.

IN the discussion of educational problems which have taken place in recent years, no subject has profited more than English. A few years ago it was seriously questioned whether college students should be required or even permitted to study literature; the supposition being that the master-works of literature could be "read at home, after the completion of the college course." It has not been long since a book was written upon the study of literature which was entirely devoted to proving (1) that literature is a proper subject for university study, and (2) that it is possible to frame examination questions in literature of such a nature as to compare in abstruseness with those proposed for students of Egyptology and mathematics. Even when recognized as a subject proper to be included in secondary-school curricula, the idea has very generally obtained that "anybody can teach literature;" and the "weekly exercise in English" required of all students and taught by an over-worked teacher in some other department, has too frequently proved to be indeed a "weakly" exercise.

Of late years, however, these things have changed, and now no lover of our noble literature can complain of the treatment accorded this subject. It is not uncommon for secondary schools to advertise their departments of English as the strongest in

their institutions, and some of the most important educational associations have recently given particular attention to the pedagogy of the English language and literature. It only remains for those who have charge of the teaching of these branches to demonstrate that such subjects are deserving of the popular favor which is so freely being accorded to them, and to prove their disciplinary and culture value.

The teacher of English, whether in secondary school or college, should possess three characteristics: (1) He should be a student of literature in the highest sense of the term. (2) He should have certain ideals, and set up definite aims for his teaching. (3) He should be acquainted with the pedagogical method which is the basis of successful work in the teaching of English. In the present paper only the first two of these characteristics can be discussed.

I.

That he who essays to give instruction in English should be a student of literature is self-evident. The time has passed when school officers and the public generally believe that the teacher of English need possess no special qualities, but that the work may be distributed among teachers of Latin and mathematics. The teaching of literature demands special qualities of mind and soul; and if we are to have anything more than mechanical work, we must have men and women who possess that culture and breadth of view which come from familiarity with the master-works of literature, and that exactness of knowledge which is the result only of prolonged study. It is as difficult to teach an English masterpiece to a class of boys and girls as it is to teach them mathematics. More difficult, indeed, is it to teach Lowell's *Sir Launfal* so that it may make for soul-development, than to teach the principles of the Latin Language or the narrative of Xenophon. It is one thing to drive a class through an "edition with notes" in such a way as to make the text the basis for numberless references to historical personages, parallel passages, and philological curiosities; quite another thing is it to teach some immortal poem or prose work so that it becomes a part of the soul-life of the pupil, and fills him with high ideals and lofty purpose. The room in which classes in literature recite should be the home of thoughts which do often lie too deep for tears, and for this work no ordinary requirements are made of the teacher. No subject in the curriculum calls for any greater force of character, exactness of scholarship, and skill in imparting knowledge, than English.

The teacher of literature, then, must first be a student of literature. Whatever efforts he makes toward his own intimate acquaintance with the masters of thought will give him new power to inspire others. The very essence of the study of literature is intimate relationship with the life of the author. The great power for good which the teacher of literature enjoys depends largely upon this principle. How vital is it, then, that the teacher of literature be himself fit to converse with the master thinkers, and thereby able to impart some what of his own knowledge and enthusiasm to those under his charge.

II.

As a student and as a teacher, he who gives instruction in literature should keep before him certain aims upon which his work is based. No subject suffers so much from vagueness of method. In our schools, the long-suffering pupils are subject to everything, from the easy read-as-you-please, get-what-you-can method to the "edition with notes" plan. The historian Freeman's caustic remark, that the study of literature is nothing but "chatter about Shelley," contains a large element of truth. It is very true that the student must find pleasure in his reading, and that we must be careful not to repel him by making the subject unnecessarily dry; but this does not mean that literature is not to be studied, in the fullest sense of the word. Compromises are dangerous. The teacher who seeks to win prestige by molly-coddling his pupils and letting them off from as much real work as possible, is despised by them. In our eagerness to strew with roses the path of literary study, we must be careful not to take away all the benefits which come from close application and methodical work. Fiction has an important place in the program of studies, but surely not all the time given to instruction in English should be used by reading interesting stories, merely for the entertainment they afford. Any teacher can interest his pupils by reading *Tom Sawyer*, or *The Last of the Mohicans* to his class; but no one will maintain that such work would be

fruitful. In short, the instruction in English must be methodical; and, taught in this way, the disciplinary value of the study is nearly, if not quite, as high as its culture value.

President Eliot comes very near giving the ideal statement of the value and the objects of the study of literature when he says, "To understand rightly and to use critically the mother-tongue is the flower of all education." As teachers of English we may test our efficiency by the standard here set forth. Do our pupils have the power to understand rightly what they read, and can they use with exactness their native language? Does the study of English increase their power of thought and give to them new ideas, and does it enable them to express their thoughts in idiomatic English?

The first object of the study of literature is the acquiring of the power to understand the thought expressed by the writer. This is not so easy to do as is sometimes supposed. Many mature persons, who would be indignant if any one expressed doubt of their ability to read, are veritable infants when they attempt to read understandingly some meaty passage. This is a day of many books, and those who attempt merely to read the popular books of the hour are in danger of superficiality. We are fast becoming a nation of smatterers, simply because the element of haste enters so largely into our lives. We hurry to trains, to meals, through life; and allow small time for the development of those traits of character which are the elements of true culture and which form the basis of complete living. We read newspapers by their headlines; looking chiefly at the nouns and verbs, and thus forming the habit of neglecting those elements which in literature contribute very largely to our esthetic appreciation. Again, the habits of reading rapidly prevent the giving of proper attention to the thought, and thus it is becoming more and more difficult for men and women to read with profit any work which requires close application. The student of literature should bear in mind that his first and chiefest object is the understanding of the author's thought, and to this end he should be careful how he reads.

Time should be taken to insure perfect assimilation of the thought. It is quite possible to read Emerson's essay on *Compensation*, or Carlyle's masterly criticism of Burns, and to come away not one idea the richer for the time spent. The words pass before the mind and make no more permanent impression than the landscape seen from the window of a swiftly moving car. Such reading is worse than useless, for it incapacitates the mind for any solid, fruitful work later on. All profitable study of literature must be without haste. It is not quantity, but quality, that counts. The student who measures his literary study by the number of pages he has read, is probably wasting his time. The test should be, not the number of pages covered, but the amount of thought mastered.

The great German historian and philosopher Droysen said that the essence of historical method is "understanding, by means of investigation." Though in a somewhat different sense, the words are equally applicable to the study of literature. One must not only understand the thought content of the literary work he studies, but he must master the relation of the work to the time in which it was produced, and its part in the development of literature. He must test his knowledge of the masterpiece by making it yield to him as much information concerning the personality of the author as possible. As Leslie Stephen wisely remarks: "The whole art of criticism consists in learning to know the human being who is partially revealed to us in his written and spoken words." The educational value of such a work as Carlyle's *Heroes and Hero Worship* can hardly be estimated, because on every page shines out the man; rugged, tremendously in earnest, despising artificiality and sham, and continually magnifying work. A student cannot become familiar with *Sir Launfal*, *The Present Crisis* and *Commemoration Ode* without learning from Lowell great lessons of patriotism, charity, and the duty of service. Plutarch's *Lives* has been styled "the pasture of noble minds," because a youth cannot look upon the shining examples there set forth without being inspired by noble emulation.

> "To look on noble forms
> Makes noble through the sensuous organism
> That which is higher."

The highest educational value of the study of literature is the thirst for knowledge and culture, the love of high ideals, the communion with noble minds, which it affords. The student comes to understand through

investigation; but his understanding is not of the head alone, but of the heart and the inmost life.

But the thorough understanding of a literary masterpiece involves more than the assimilation of the thought and the appreciation of the author's character. Very much of literature is highly imaginative, and there can be no fruitful study without constant use of the imagination. American zeal for the practical has gone so far as to discredit the study of art and poetry as being rather the accomplishments of women than proper subjects for study by men. The imaginative has small value in daily life; everything is subservient to use. The American looks upon the grandest scenery with his hands in his pockets, his cigar between his teeth, and with a mental calculation as to the market value of the land which he sees. In the schools, the popular demand is for education which the boy of sixteen or eighteen years can turn directly into money. The three months' commercial school is abroad in the land, and it flourishes right well.

Again, the last ten years have seen a marvellous increase in scientific knowledge; the value of scientific training is clearly recognized; and, as a result, there is no patience with any subject which does not lend itself readily to such treatment. The proper cultivation of the imagination is almost entirely neglected, even in secondary schools and colleges of high rank. Intellectualism is fastening itself more and more upon us; in the school as well as in life. Men forget that the development of the child is very closely comparable to the development of the race, and that the childhood of all nations has been characterized by the keenness of the imagination. They forget that progress of almost every sort is frequently due directly to the imagination; that inventions are made through this power; that great business enterprises exist in idea before they come to be in fact; that good government is largely the product of worthy ideals upon the part of the citizens. They fail to remember that the imagination inspires the young with dreams of future usefulness, comforts the men of mature years who feel the weight of life's burdens, sustains the aged who are thinking of the heavenly mansions. In the last analysis, there is nothing more practical than the imagination. It is a sorry ideal of education and of the true preparation for American citizenship which encourages men to become mere machines, content to live from day to day, to work as the ox works and to live as the ox lives. Whatever else be ommitted from the school curriculum, we cannot afford to neglect the study of the great works of the imagination; and this study must be conducted in such a manner as to develop and strengthen the imaginative power of the pupils.

In his poem entitled *A Death in the Desert*, Robert Browning discourses of the soul of man in these words:

"How divers persons witness in each man
Three souls which make up one soul: first, to wit,
A soul of each and all the bodily parts,
Seated therein, which works, and is what Does.
And has the use of earth, and ends the man
Downward; but, tending upward for advice,
Grows into, and again is grown into
By the next soul, which, seated in the brain,
Useth the first with its collected use,
And feeleth, thinketh, willeth,—is what Knows:
Which, duly tending upward in its turn,
Grows into, and again is grown into
By the last soul, that uses both the first,
Subsisting whether they assist or no,
And, constituting man's self, is what Is—
And leans upon the former, makes it play,
As that played off the first: and, tending up,
Holds, is upheld by, God, and ends the man
Upward in that dread point of intercourse,
Nor needs a place, for it returns to Him.
What Does, what Knows, what Is; three souls, one man."

In such language does the poet express his conception of the elements which, combined, make up the perfect man. No one of these can be neglected. Physical education is an important part of the work of the school, and a sound body must be insured as the proper basis for mental and moral training. Intellectual education satisfies man's insatiable desire to know, and develops those elements of character which lead men to search for the pole, to explore the darkest continent, to delve in the musty records of the past, and to search out the secrets of the stars. But men are not content merely to live and to know; they must also understand. So in all ages and in every clime poets are born, whose high office it is to act as seers to help men to understand the deeps of life.

For in the last analysis, the education of the "what Is" must ever be the transcendent aim of all education. Says Scott: "We shall never appreciate our true character and destiny until we consider everything else as moonshine as compared with the education of the heart." If the American republic is

to pass safely through the perils which ever come to the nation which has wealth and power, it will be because men do not permit greed for gain to crowd out those elements of character which, after all, are the essentials. Emerson writes: "The age of the quadruped is to go out; the age of the brain and of the heart is to come in." And in this training of the "what Is," the study of literature must have an important part. In the hands of a teacher who approaches the subject merely from the intellectual standpoint, considering it to be simply a means for mental gymnastic, there is, it is true, a certain disciplinary value; but in the hands of one who by qualities of mind and soul is prepared for his high office, it becomes a minister of life unto life, and an instrument fitted to open the soul of the student to the unseen realities. "For the things which are seen are temporal, but the things which are not seen are eternal."

NORTHWESTERN UNIVERSITY.

THE TEACHING OF PHYSIOLOGY IN THE GRADES.—I.

By LOUIS J. RETTGER.

IT is the intention to suggest in a few brief articles on the subject of teaching physiology, a tentative course of study in this branch extending through the eight grades with a final article on its presentation in the high school. While there has been progress in teaching this branch as well as in the teaching of others, a student of physiology observing the way in which this subject is still too generally treated, sees an urgent necessity to call attention to a few cardinal faults. The most pathetic of these is the haphazard way in which every point in physiology is made to adorn a hygienic tale whether it fits or not. How the most interesting fields of study are quickly dismissed with a few platitudinous remarks on their care, remarks which are frequently not intended to be taken too seriously but which serve as a kind of afterlude to the topic dismissed, and a prelude to the next point to be similarly considered. It may be our legislators had this mainly in view when by enactment physiology was made a common-school branch of study, but while these reasons may have been valid for its introduction, there are better reasons to be found for its continuance.

There is a wider purpose in the study of history, for instance, than to enable one to decide about voting the democratic, republican or populist tickets. History deals with things which in addition to giving this, transcend local policies, or ephemeral questions of state. The study of astronomy in its contemplation of the infinities of space, the exactness of planetary movements, and the widened interpretation of the universe, ought to do more than to enable one to read the almanac or predict the weather. Who wants the story of geography and geology as to the manner in which the mountains were made, and the valleys cut out, and the soils prepared, to degenerate into a question whether potatoes should be planted on a low plain, or a rocky plateau, or whether sand-dunes might be more profitably used for raising melons finally, or left bare to adorn the landscape? What would the botanist say who should be asked to limit his study entirely to the extraction of specifics for the fevers, or the flavors for the palate, or to make the analogy more exact,—to the mere questions of growing successfully certain plants? All these things are desirable in their place and even necessary. But there are scores of people who know how to raise turnips, and cabbage and corn who are not students of botany in any real sense of that term. There is an endless difference between the study of zoology, and the mere successful raising of cattle for the market.

Now the physiologist shares with the students of these other fields of study the desire that his branch shall be put on its real scientific basis. There is a wide difference between knowing how to take care of the eye in a general way and understanding the *physiology of the eye*. One may know the former and have not an inkling of the latter. To learn the remarkable way in which in accordance with the laws of physics and harmony, we hear the multiplicity of sounds reaching the ear, has nothing in common with the mere assertion that the ear-wax must not accumulate, or the concha be pulled too hard. The person who knows the *physiology* of the ear will

incidentally without noise or tumult have discovered the latter.

The hills, the valleys, the planets, the stars, the plants and the animals are—to use a current expression—incarnated thoughts or truths, to grasp, interpret and rethink which is infinitely more valuable to the mind than to limit everything to its most obvious utilitarian connection.

No less is the real *physiology* of the human body a vast system of truths, the culminating expressions of thought in the physical world. There is as much thought in the eye as in all the light that pervades space. There is as rich a thought in the physiology of the ear as in all the myriad sounds and harmonies that vibrate. There is as much thought in the physiology of respiration as in the chemical oxidations of furnace or engine. The test-tube of the laboratory has not yet been able to reproduce the chemical processes of every-day digestion and assimmilation. In short, the body is a little universe in itself—the highest expression, perhaps, of the natural world. To understand and interpret its life history as fully as we can is to understand and interpret some of nature's best truths—to know which will help to make us free to as full an extent as any bit of real truth can make us.

Really to understand just how in obedience to definite laws all the organs of the body perform their work, often with an exactness and nicety unsurpassed in the most elaborate and ingenious mechanisms, and constructed on lines which reveal an almost perfect adaptation to complex physical forces or still unknown chemical processes in order to accomplish the purpose for which they exist—this is physiological study. To understand the circulation of the blood in terms of the laws of dynamics as thoroughly as the circulation of a city's water-works system by an engineer, is to study the physiology of the blood stream.

To study the reaction of nerves to stimuli, to interpret the laws which seem to govern muscular contraction in the same manner as the builder of a locomotive tries to determine the manner of movement of his engines' pistons—this is studying the physiology of the muscle.

It will therefore be the aim in these brief articles to emphasize the study and interpretation of real things either structures or experiments. Except in so far as the teaching of physiology deals with real structures or actual experiments, at least enough of these to form a rational basis for other work, it is worthless. To have one's mind burdened with a lot of meaningless names standing for unknown structures r processes is a mere loss of energy and brain-space. To have the terminology of a text-book ever so well is in itself no more real physiology than to have swallowed a menu-card is to have eaten a nutritious meal, and their relative values are the same. If in lieu of the large amount of word-work we could substitute just a few real high-grade experiments and demonstrations the gain would be much. To suggest how this may be done by anyone, even without the aid of elaborate apparatus, is the present purpose.

By the foregoing it is not meant unreasonably to discredit all hygienic references. It is rather aimed to place these on a more rational basis. The clearest perceptions of hygiene spring from correspondingly clear conceptions of structure and function, and to disassociate them is fatal. The care that anything demands arises altogether from the material and manner of its construction and the purposes for which it is intended.

There need never be a fear that the student who has real physiological conceptions will ever miss the hygienic aspect of this knowledge. He will, on the other hand, give added emphasis because he has added insight, and his emphasis will be born of understanding, and not be a verbal reflection of the page of his text-book. But, best of all, real physiological study is full of interest, because nature properly approached is never dull. How devoid of any redeeming feature is the vague description of the text when it attempts to explain say the workings of the heart! "Auricle," "ventricle" are words rather than ideas, and for such terms as valves, cords, etc., there is no corresponding meaning. For awhile under the spell of the words things seem clear, but soon the inherent fallacy comes to light. Fortunately the words are soon forgotten, and with them leave the vestiges of thought as far as any real knowledge of the heart is concerned. This verbal text-book work on the heart may have consumed a recitation hour daily for a week or two, and yet this valuable time would have been better spent for the children if they had been allowed to run out of doors, or had been provided with some reading that had an intrinsic value in its perusal. No power of the mind was helped, not even the memory. There was no added capacity to understand later on some new structure that might demand their study. They are no more able now than before the study to interpret a heart itself should one be put into their hands for explanation. The valuable time and the opportunities of the common school demand that this drain of energy shall cease, and that the study of physiology result in living information and added mental power, or else make room for something that

will do this. If it should be argued that actual study of structures and experiments is too hard for the pupils and is rather intended for the special student later on, it would only demand a single second thought to show that an attempt to understand structures and experiments when stripped of all concreteness and reduced to mere verbal descriptions is many times more difficult. Which is the more easily and yet the more thoroughly done—to study London in an actual visit to the metropolis, noting streets and buildings from the top of an omnibus, and loitering in and around its noted places, or to study a guide-book to London? Even when the descriptions are masterpieces of literature they fall far short of a sight of the thing itself. Who will have the clearer notions of Westminister Abbey—he who has read Irving's beautiful description of it, or he who has himself loitered in the Poet's Corner and wandered among the royal tombs? Not everybody can see Westminister Abbey, and possibly Irving's description is a matchless substitute, but it is different with matters in physiology. Leaving out as irrelevant many elaborate and technical points, the bulk of physiological study is as available to the common school as to the class in college. Animal structures which for all practical purposes duplicate the anatomy of the human body are as plentiful as meat markets, and experiments in physiological processes as possible as elementary ones in chemistry, physics or botany.

It is hoped that some of the practical lessons to be suggested in succeeding papers may be followed by some teachers in this subject who realize the desirability, in fact the necessity of lifting the subject of physiology out of the meshes of the text-book and putting it upon its real scientific footing, thus substituting a study of ideas for the juggling of words.

HOW TO USE THE NEW GEOGRAPHIES.—III.

By CHARLES R. DRYER.

THINGS VS. WORDS.

Probably no mistake in the teaching of geography is so common or so serious as to make it chiefly the memorizing of words. This assumes its most flagrant form in that ear-mark of a fossil teacher, the assignment and verbatim recitation of a portion of the text-book. This allusion to such a thing as a possibility is evidence that in the mind of the writer there is no assurance that there is not a teacher somewhere in the state of Indiana who is starting out to use the new geographies in that way. This is a subject upon which it is difficult to write calmly and to refrain from expressing strong personal opinions as to what ought to be done to such teachers, if there are any, and to school officers who employ such teachers and permit them to teach that way. But let us dare to hope that harsh remarks would apply to only a small minority and would therefore be unjustifiable.

It can never be too much insisted upon that geography is a study of things and not of words and that the constant effort of the teacher must be to make his teaching as realistic as possible. Probably there are none of us whose work is incapable of improvement in this particular.

Location, distance and direction are the fundamental concepts of geography, but how many teachers themselves have that educated geographic sense which enables them always to know "where they are" and never to "get turned around?" to have clear and definite perceptions of "the lie of the land," the location, direction and distance of the features with which they are most familiar in their own neighborhood, and to quickly acquire such when placed in new surroundings? Many a child has repeated glibly the words "If I stand with my face to the north the east is on my right hand, etc.," without really (that word *really* means a great deal) knowing which way was north or east in his own schoolroom. Page 18 of the Introductory Geography and page 15 of the Advanced suggests many ways in which this knowledge may be made real. The points of the compass should be plainly marked upon the floor of the room and also in the schoolyard. Such questions should be asked as to lead the pupils to notice the directions traveled on their way to and from school, the points of the compass at their homes, and the directions of prominent and well-known objects from the school and the home. Finally they should be taught how to find the cardinal points day or night anywhere by observing the position of the sun or stars. There are many educated adults, even schoolteachers, who have

very vague notions as to where the sun rises or sets at different times of the year and in what part of the heavens he may be looked for at different hours of the day. In stating geographic distances feet and miles are the most useful measures. In cities fifty feet, the usual width of a lot, 60 feet, the usual width of a street, and 300 feet, the usual length of a block or square, lead up to 330 feet or one-sixteenth of a mile. In the country, roads are usually one mile or half a mile apart, 5,280 or 2,640 feet, some a quarter of a mile, 1,320 feet.

Definitions are often the bane of good teaching. When presented before the things defined they are an abomination; when made by the pupil himself from direct observation of the things they are valuable as exercises in language, and as clarifiers of the pupil's thought. As soon as made they become useless. We never think of making a definition of book, pencil, cap, button, or of anything else with which we are perfectly familiar. The old geographies began with several pages of formal definitions of common features, as river, lake, island, cape, peninsula, strait, etc., and millions of children have learned and recited them without being able to recognize either feature when they saw it. A child *may* catch the idea from a definition but there is no assurance that he will, and the idea at best must be a vague one compared with that caught from the thing. A class of teachers was once asked, "What would be the best way to teach a child the idea of a flood-plain?" One answered that she would make a model of it in sand. It was only after several minutes reflection that it dawned upon another as a happy thought that he would take the child out and show him a flood-plain. This illustrates how far from the minds of many teachers is the simple, direct, common-sense method of teaching by things. But I hear a hundred teachers say, "There is no flood-plain near my school, and if there were, the parents or the trustee or the superintendent would object to my taking the children out." The first statement may be doubted: flood-plains, although not universal, are very common. The latter statement is, in too many cases, true. How much the teacher may do to overcome this obstacle will not be discussed here; but even it, strongly entrenched as it may seem, does not prevent the teacher from doing realistic teaching. Simple water poured upon the table or floor may be made to assume all the plane forms which arise from the relations of land and water. A little sand or clay may be put into all the forms of relief. A combination of water and clay may reproduce the whole face of the earth. When the child has learned the form or feature by seeing it in the field or in miniature, he can satisfy the teacher that he knows it by making a definition. The little Irish boy who said that "an island is a part of the sea that hasn't any water into it," knew the *thing*, and made just as serviceable a definition as any.

PICTURES.

All this work is essential with any book and can be done as well with none. Our Indiana texts do as much realistic teaching as it is possible for books to do, and by means of pictures. This is far from comparable in efficiency with field work or even modelling. A picture is not a presentation of a thing, but a *re*-presentation of it, and cannot give so vivid and unmistakable an image. Pictures, like words, may be and often are misunderstood. Savages and uneducated persons often fail to see any meaning in a picture. Children sometimes display a similar disability. Every adult can recall strange and absurd misinterpretations of pictures of which he was guilty in childhood. But in spite of these defects, pictures are a valuable aid to realistic teaching. In the opening pages of our text-books which are devoted to fundamental ideas constant reference is made to the pictures displayed there. No feature is introduced or described without one or more pictures, and by the use of the Index other illustrations of the subject may be found. It does not seem possible that any healthy-minded child could read and study such pages as those on the subject of mountains without looking at the pictures and spending more time upon them than upon the text; yet there are many adult students who habitually read a page or a book without a glance at the illustrations, and are scarcely conscious of their existence. The explanation probably is that such persons have never learned to interpret pictures; they mean little or nothing to them and are therefore uninteresting. The teacher should know whether or not his pupils can read pictures.

MAPS.

One of the difficulties inherent in the subject of geography is the fact that most of its material is large and distant and cannot be brought under direct observation. This makes it all the more necessary that whatever realistic work is possible should be done. The difference between geography with it and geography without it cannot be overestimated; but after all is done the greater part of the earth must be seen

representatively. For this purpose no device is so efficient as the map. Most people can use a map, though it is often in an awkward, haphazard, blundering way. A map is less natural and graphic, and more artificial and conventional than a picture. It is a peculiar printed language and must be learned before it can be read. We do not expect children to read the printed text until they have been taught, yet we often ask them to interpret the ideas expressed by a map without any previous instruction in map reading. The result is that most students are very poor map readers; they are unable to get as much information from a map as from the printed text, when the reverse should be the case. A map is a drawing designed to show the location, direction, distance and area, in a word the *distribution* of features upon a horizontal plane. Take any map, say the map of North America in the Advanced book, and try to write out in words all the information given by it. The map expresses in one page what would require many pages of text to express, and does it in such a manner that a general view of the whole or a particular view of any detail may be had at a glance. The whole of distributive geography, or the arrangement of features upon the face of the earth, should be learned from maps. To try to get it from any other device is a waste of time and energy; and distributive geography is the solid foundation of the whole science. If every pupil left the grades with the ability to read maps readily and correctly it would be of more practical value to him than all the other knowledge of geography he usually does leave with. The best way to get a correct understanding of a map is to make one of some very simple area at first, as the top of a desk or table with a few objects placed upon it. One caution is to be added to the suggestions on pp. 18 and 19 of the Introductory book: *let all maps be drawn and read at first in a horizontal position.* After the essential concept is well fixed in mind the teacher may show the convenience of hanging them up. *Do not teach that the top of the map is north*, because in so many cases it is not true. Any part of the map may be north according to convenience, but the points of the compass should always be plainly marked by an arrow or cross. This is heresy but that does not prevent it from being true.

Young students are to be map users rather than map makers and map drawing should never be made an end in itself, but only, like any other language, a means of fixing and expressing thought. A good map should show all that is necessary to make itself intelligible. This includes (1) the label or name of the region shown, (2) the points of the compass, (3) the scale, (4) an explanation of any peculiar or unusual signs used, and (5) the name of each feature. Location is shown by the sign and name; as, a dot, circle or star for a city, a blue line for a river, etc. Direction is shown upon every map in our texts, except small plans and insets, by parallels and meridians, which is the only accurate way. Suppose a child who has been taught that the top of the map is north undertakes to read the map of North America. His interpretation of directions will be correct only in the lower middle. He will say that Asia is north of Alaska, when it is really west. Perhaps latitude and longitude should not be taught in the primary grades, but the use of meridians and parallels may be and must be learned before maps can be used to advantage. Among educated persons, graduates of secondary schools and colleges, vague and erroneous notions of latitude and longitude are common. The ideas that parallels and meridians are actual lines upon the earth, that there are no more of them than are shown upon the map, that they are movable and may be drawn anywhere, are some of the variations from blank ignorance inherited from a teaching of words instead of things in childhood. That they are mathematical lines devised for the purpose of locating places accurately upon the earth and upon maps, and the simplicity and convenience of the device come to many as a revelation.

Distances and areas are shown upon a map by the scale, expressed in our texts by a graduated line. The teacher should see to it that the pupils can use this scale readily. Maps cannot all be drawn upon the same scale, but they might be made more uniform instead of varying according to the size of the page. For instance, the map of South America in the Advanced book is on a little larger scale than the map of North America, the scale of Asia is smaller, of Europe nearly twice as large, and of Africa nearly the same. Similar differences occur among the maps of groups of the United States. Thus misconceptions are sure to arise which the insertion of a comparative area in one corner cannot correct. Only the vigilance of the teacher and hardly that can prevent the pupil from getting the idea fixed that New England is as large as the Middle Atlantic states and larger than Texas. In political maps generally colors mean nothing, but in the map of Africa half its story will be missed unless notice is taken of the legend or explanation. No one can read a map to good purpose who goes at it blindly, hit or miss,

but a few minutes' attention to the label, scale, direction lines and explanation makes a trained student master of its contents.

Two sorts of maps are needed in every schoolroom, small scale maps, like those in our texts, for close personal study by the pupil, and large scale wall maps for use in recitation. One absolute rule which can never be disregarded with safety is that *no lesson in distributive geography should ever be studied or recited without the constant use of the map.* A student who, in reciting upon the topic of the rivers of the United States, locates the Hudson Bay system in New York because the Hudson river empties into that bay, betrays the fact that she has studied the text without reference to the map and has learned empty words instead of things. The map must stand as the most realistic representation available for large areas, and no one need fear the bugaboo of "the map idea." A clear map idea of the United States or of Europe is not the best attainable under favorable conditions, but it is superior to the idea generally attained under the conditions of the best public schools.

DRAWING.

By FLORENCE SMILEY.

IN presenting these papers on drawing, there is no theorizing, for the work has been done in the public schools of Madison, Ind., and has stood the test of actual trial. Nothing will be given that has not been first presented to our grades, and what has been accomplished here in one year can be done any place where the teachers are earnest and enthusiastic in this particular branch. As planned, I feel confident that our course of study can be easily adapted to the needs of the district school.

In sense training, drawing certainly is of great value. It is not the aim of supervisors of drawing to train artists, although incidentally artists may be trained. First of all it helps children to see. The observation lesson is always an accompaniment to the actual drawing lesson, as the latter depends upon the former. More than this, the study of drawing creates a love of the beautiful and a desire to find the beautiful even in homely objects. Is there anything then, more worthy a regular place in the school curiculum, than drawing?

During the month of September we took up the study of grasses, grain, leaves and fall flowers. There are some cuts accompaning this article showing some actual drawings by children in first and second grades.

The work for October embraced some fall flowers. The goldenrod, purple aster, the seed pods of the milkweed, the gourds, etc., made very satisfactory drawings. The work as planned for November will prove very interesting, as this month is rich in materials. The great variety in fruits and vegetables gives fine opportunities in selecting interesting and beautiful objects. The object work for the first part of the month should gradually lead up to a Thanksgiving picture which will represent the fruits of the harvest.

Little children are very fond of illustrating the stories that are told them, and much good busy work can be done in this way. Let the work be the free expression of the children, and to secure this the work should have but little criticism. A hint or suggestion may be made that will prove helpful, but nothing should be done in a critical way. The first drawings will be crude; we can expect nothing else.

Let us suppose that a lesson is to be given on the pear. Place several pears in different parts of the room, and have the children select the one they can see best. Ask them to look at the pear carefully, as you mean them to tell you something of its appearance.

What do you notice about the shape?

The pear is bigger at the bottom than it is at the top.

What else?

The pear has a stem. It is yellow. One side is red. It is a little bit flat at the bottom. It is a little flat on top, too; or it looks that way.

Perhaps some one will say, "It has a blossom on the lower part." Likely as not the pear will be resting on the blossom end.

"Can you see the blossom?"

"No, ma'm, but it's there."

"That is true, but we are only to tell of what we really see."

In the same way lessons on the apple, on the grape, on a number of vegetables, may be given by teachers who have had but little training in drawing, and the results will prove satisfactory I am sure.

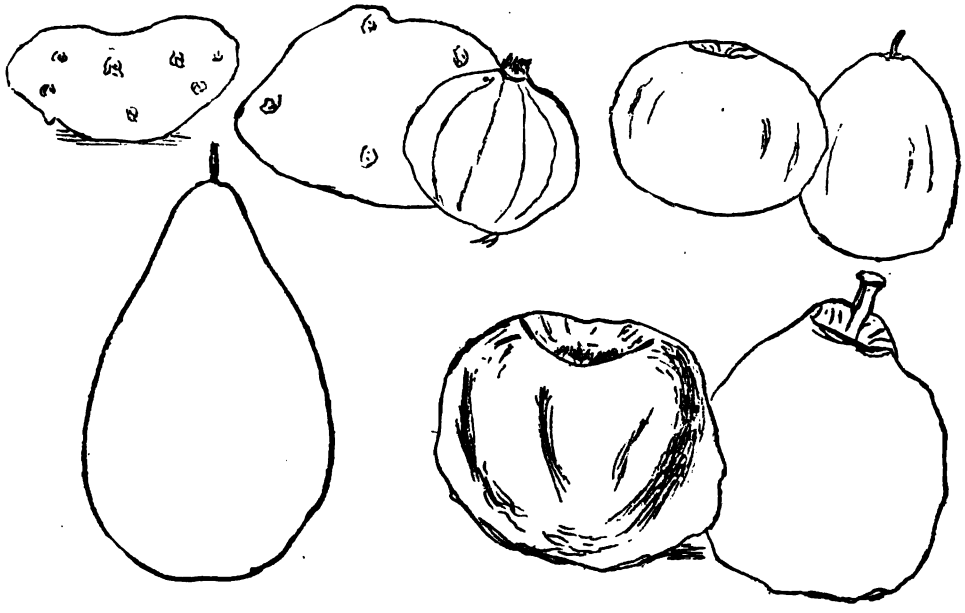
When a group of objects is given, place them in such a manner that good balance is secured,

but avoid stiff arrangements. Now note the general outline of the group and block in a figure showing the general shape. Work for correct proportion of the group as a whole, before attempting to sketch in the individual members of the group. After this is done work out the general shape of each member, keeping in mind the proportion of one part with another.

Judgment and comparison are necessary in this work. At first, it is well to do but little shading, as the outline drawing requires much training. It is sometimes well to place some object in the window, or attached to the window frame in such a manner that the effect is that of a silhouette. Then have the children observe and draw this outline. Drawing in the air is a very good drill. Have the pupils close one eye with the left hand, and with the index finger of the right hand, trace in the air the outline they wish to reproduce.

Work for broad effects. Look for the general points instead of individual peculiarities. For instance, draw an apple in such a way that it may be a representative apple. It is not necessary to show a blemish that may be on this particular apple.

Materials necessary for work in drawing are rough paper, heavy in quality and a soft drawing pencil. The pencil should be sharpened so that the lead comes to a round point, instead of a sharp one, The sharp point gives a thin, black wiry line, while the line we want is a broad gray one.



Avoid holding the pencil too close to the point and see that the pencil is held lightly.

Knowing as we do, the great value in drawing itself, and having seen how it can be made to assist even in discipline, we would say to all teachers, "Allow your pupils this privilege."

MADISONVILLE, IND.

BITS OF INFORMATION IN GRAMMAR.

USES OF LOGIC IN GRAMMAR.

By J. B. WISELY.

IN the last two articles, in the August and October numbers of THE EDUCATOR, the author has tried to show how much logic a seventh or eighth-grade pupil should know in order intelligently and reasonably to study technical grammar. That the facts of grammar depend upon this knowledge of logic for their reasonable explanation has been to some extent shown in the same articles, but one might illustrate the truth of this statement by discussing any topic of the subject.

C. C. Everett, in his book entitled *The Science*

of Thought, after severely criticising grammarians for their superficial, formal, and mechanical treatment of the subject of technical grammar, says that their difficulty is that they have divorced grammar from logic. This is evident to one who has made a study of the subject as based upon logic. No one who sees the relation between logic and grammar will say, for example, that the sentence has two principal parts —a subject and a predicate. The sentence is a mere instrument for expressing the thought. It is only a symbol which stands for the thought. Since the thought has three elements—a thought subject, a thought predicate, and a thought relation, the sentence must have three parts—not three words necessarily—but three parts—a part corresponding to the thought subject and expressing it, the subject of the sentence; a part corresponding to and expressing the thought predicate, the predicate of the sentence; and a part corresponding to or expressing the thought relation, the copula of the sentence. This is the only way one can reason it out and if one divides the sentence into two parts, he must divorce his grammar and logic, leave logic out of the question, and deal with the sentence arbitrarily or mechanically. That grammarians have done this very thing is evident from the fact that most of them admit incidentally that the sentence has three parts but say that it is not essential to distinguish between the copula and predicate.

Very few grammarians make any distinction between the two sentences following: (1) The flag is red, white, and blue. (2) The boy is honest, industrious, and obliging. In fact, I think almost without exception, they would classify both of them as simple sentences with compound predicates, which indicates again that they have divorced grammar from logic and are dealing simply with the form of the sentence. Their analysis is an eye analysis and not a mind analysis. They do not see the thought back of the sentence. The two sentences do look alike. The subjects are similar, the copulas are the same word, and each one has three adjectives in the predicate, joined by the coordinate conjunction, "and." So far as the outward appearance and form of the sentences indicate anything they are alike, and this is the reason why grammarians call them simple sentences with compound predicates.

One who sees the thought back of the sentence and finds in the thought the explanation of sentence forms, will not be satisfied with this classification of the two sentences, because he will see that, while the two sentences look alike, the thoughts are different. In the first, the expression, "red, white, and blue," expresses one idea. The flag is this color—red, white, and blue, and one cannot expand it and say, "The flag is red, the flag is white, and the flag is blue." The sentence does not mean that. The flag is one color and that is red, white, and blue combined. So this is in fact a simple sentence with a compound predicate. But the expression, "honest, industrious, and obliging," in the second sentence, does not express one idea. There are three separate attributes affirmed of the thought subject and the sentence means, "The boy is honest, the boy is industrious, and the boy is obliging." It is, therefore, an abridged compound sentence, not a simple sentence with a compound predicate.

Grammarians fail to make a distinction between the thoughts expressed by such sentences as those given above and so fail to distinguish between the two sentences. They judge sentences by their outside appearances only and thereby defeat the main purpose of the study of technical grammar. Their grammar degenerates into a mere play with words, a mumbling of formulas, a repetition of rules and definitions, a dealing with husks and hulls without any spirit or life.

It might seem to be unimportant as to whether the child in the study of grammar classifies such sentences as simple sentences with compound predicates or abridged compound sentences and so it is. It matters little, so far as the name is concerned, whether the child calls the sentence "Five and four are nine," a simple sentence with a compound subject or an abridged compound sentence. But that the child see the distinction between this sentence and the sentence "Wood and coal sell readily," is very important, because if technical grammar does not give the child a mastery over the sentence as an instrument in expressing thought, if it does not help him to express thought more accurately in sentences and to obtain from the sentences of others more accurately the thought which they express, if it does not help him to make fine distinctions in thought and to use words more skilfully in conveying these distinctions to others, it is worse than useless. It is a waste of time. This is the essence of the study of technical grammar. The thought is the end and the sentence only the means. The sentence is of no use to the child except in its relation to the thought, which it expresses. I am using these points merely to illustrate the truth of Mr. Everett's charge, that grammarians have divorced grammar from logic.

NATURE STUDY IN THE COMMON SCHOOLS.

A TALK ABOUT WATER-DROPS.

By A. WILMER DUFF.

WHAT is a water-drop? To experiment is to try for yourself, and as that is the surest way of learning anything, we shall begin with an experiment. Dip your finger into water and withdraw it, and you will be able to see the shape of the drop that forms at its end. It is round like a glass bead except just where it hangs to your finger, and if you watch it carefully you will see that, just when it gets free from your finger, it is nearly perfectly round. If you let it fall on a piece of glass it will form a circle. If you could see it while it is falling you would find that it is nearly a perfect sphere. If I let water from the end of a stick gather and form a drop, while the end is in a glass of paraffin oil, you will be able to see a much larger drop hanging from the stick and you will find that it is nearly quite round.

Such, too, is the shape of a rain-drop while it is falling. You may try this the next time it is raining by holding a sheet of paper so as to catch some of the drops. We can, however, learn still more from the drops formed at the end of the finger. Watch a few and you will see that each drop seems to have some difficulty in tearing itself away from the water that remains. The drop has to grow quite large and heavy before it can by its weight pull itself free. It is evident, then, that water holds together with considerable force. It is, in fact, this force which causes the drops to become round, for it makes the particles draw as closely together as possible. You can see another interesting example of the same thing if you hold the square end of a stick of sealing wax in a flame, for you will find that, as it becomes liquid, the sharp corners disappear and the whole end becomes round like the water-drop. This force which holds particles of liquid together is called cohesion.

Now, you all can tell me what will happen to a water-drop if it is left for some time where it falls. It will vanish. The first one which we allowed to drop on glass may already have done so. What has become of it? No one saw it going away, and if any one looked at it, he merely noticed that it seemed smaller each time he looked. But has it left nothing whatever behind? If you look closely enough you will probably discover that it has left a thin film or crust. Whatever this crust is, it must have been contained in the water-drop. You should see whether all kinds of water leave the same crust. Try, for instance, drops of spring water, river water, rain water, and also, if you can get them, a small piece of snow and a small lump of ice. We shall not, however, in this lesson, attempt to make a study of the crust that a drop leaves behind. Leaving it for another occasion, let us ask again what became of the water itself. Some of you will be able to tell me that it has become vapor or steam and is scattered in the air around us. It escaped in small particles that were invisible, and in this invisible form they are called water-vapor or steam. To this you may object that the steam formed by a boiling kettle is not invisible, but look closely and you will find that just where it issues from the spout it is invisible and only becomes visible a little further on. It is true water-vapor that issues from the spout and what we see a little farther on is not water-vapor, but a little cloud of water-drops. Try putting a spirit flame beneath this cloud, and you will find that the drops are again turned into invisible vapor.

Thus we see that one way of turning water into vapor is to heat it, and that heat can overcome the force of cohesion, which holds the particles together. It would seem, however, that this is not the only way, for if we watch a little cloud from the kettle, we shall see that it gradually turns back again into invisible vapor, which spreads itself throughout the room. Sometimes, however, the cloud rises much higher than at other times, and it seems much less ready to turn into vapor. You will find that this is the case when the kettle has been steaming for a good while in the room and the doors have been closed. Now, this evidently means that vapor forms less readily when there is already a good deal of vapor in the room, and more readily when there is but little vapor in the air.

You may see the same thing on a much larger scale if you look at the puffs that come from a locomotive drawing a train. Sometimes there is very little smoke mixed with the steam, and the cloud that rises is like the cloud from the spout of the kettle. Look carefully and you will probably find that there is a space between the top of the smoke-stack and the cloud where nothing can be seen. Just above it is cooled by the air, and it shrinks into separate drops of water. If you could see inside the boiler you would find

that the steam above the water is quite invisible water-vapor, and the same thing can be shown by boiling water in a thin glass flask such as chemists use. Notice the clouds thus formed by a locomotive, and you will observe that on some days they hang lazily in the air for quite a long time, and on other days they fade away quite rapidly. Observe what the days are like on which they disappear rapidly, and what the other days are like on which they disappear slowly.

It will help you to understand the matter if you will try some experiments to find how fast water will turn into invisible vapor. Turn a saucer upside down and you will see a shallow depression with a rim around it. Put the saucer with the bottom up somewhere out of doors where it will not be disturbed, and pour enough water in the hollow to fill it. Then find how long it takes the water to dry up. Do this on several days, and put down in a little notebook the length of time it takes in each case. Note also in your book whether the day is cloudy or sunny, warm or cold, windy or still, and see if you can find any connection between these things. If you wish, you may use a wet rag hung from a clothes-line instead of a saucer. Always use the same rag and hang it up without wringing. Find as before how long it takes to dry.

We can now understand how real clouds are formed. Vapor is continually rising from the water on the surface of the earth, the process being greatly aided by the heat of the sun's rays. It is quite invisible until it rises high in the air. Now, people who have climbed high mountains and men who have gone up in balloons tell us that the air is much colder higher up than it is at the surface of the earth. We can understand, then, what happens to the invisible vapor when it rises high in the air. It is cooled and turned again into water-drops. These make up the cloud that we see far above us. If you watch the different clouds on a fine day, you will probably see some that look like large masses of cotton-wool. They are wavy or irregular above, but bounded by a sharp line below. The line marks the place at which the air becomes cold enough to turn the vapor into drops. If now a cold wind comes along and chills these clouds still more, the small drops will grow larger by more vapor turning into water, and finally they become large enough to fall rapidly as rain. You may sometimes, but not often, find that rain falls before any clouds are formed. This is due to a very cold wind suddenly blowing in and chilling the air a short distance above us, so that the vapor quickly turns into large drops, which fall as rain. You will find it interesting to note the direction from which the wind that brings rain usually comes. If you keep a list in your notebook you may soon become quite an authority on the weather.

After writing the last two sentences I remembered that it is sometimes very difficult to tell from what direction the wind really does come, and when the wind is very light you will probably find this difficulty. You may then try the method that sailors sometimes use when they wish to find from what direction a very faint wind is springing up. Wet one of your fingers and hold it up. Wait until it begins to dry, and you will feel one side of it much colder than the rest. That is the side of it on which the wind blows. You can detect the very slightest wind in this way. If you open the outside door of a warm room a couple of inches and hold a wet finger at the bottom of the opening, then at the top and then at points near the middle, you will be able to learn something very interesting about how air circulates.

But this experiment can teach us more than the direction of the wind. We learn from it that when water dries up from any surface it leaves the surface colder; that is, the vapor takes heat away with it. In fact, the heat is needed in all cases to turn the water into vapor. Try wetting one side of your face and then standing so as to face the wind, and then you will perhaps be able to explain why a little wind is so very agreeable on a warm day. Is it because the wind itself is cool? There are some hot summer days when the wind does not seem to cool us at all. If you notice you will find these are days on which the air itself seems moist; some people describe the weather as "muggy." Can you explain why hot weather is so much more oppressive when the air is moist?

While speaking of the cold produced by water turning into vapor, let me suggest another experiment: Some hot summer day take two bottles of luke-warm water; wrap a wet towel around one and put them out in the shade where the wind will blow on them, and after the towel has nearly dried see if there is any difference between the two bottles as regards the taste of the water. You will then know how to get cool water on a hot day. If you find that on some days you cannot get this plan to work well, you should see if you can explain the cause.

(To be concluded in December.)

PRIMARY.

EDITED BY

FLORA J. COOKE, Chicago.

EXERCISES FOR NOVEMBER.

After the children have given their ideas of why we have a thanksgiving feast, a story of the origin of the harvest festival may be told. The bravery and strength of the Pilgrims will be emphasized. Their desire to find a country where they might do what they thought was right makes a good starting point for the story. Their voyage will be described as to the kind of ship and what it contained, and all the interesting events connected with the journey. The people, as Miles Standish, Priscilla, John Alden and Mr. Bradford, will be described and represented in the typical pilgrim dress. The children will dress paper dolls to represent the different characters in the story.

As in all other parts of the story, the *landing place* should be brought as vividly as possible before the children, by means of drawing and models. They can judge of the weather conditions by this season of the year.

From their environment the children will try to determine what their homes were made of and how they were made. They will compare these houses with the wigwams previously studied. The children should then be told the story of the construction of the real pilgrim house and be allowed to construct a model showing the thatched roof. By means of paper cuttings, they should furnish and people the house and represent the animals. The story of their Indian neighbors and their homes, the modes of traveling then in use, and the different industries of the people might also be expressed in any way that the children desire.

In terminating with the story of the First Thanksgiving Feast a vivid description of the repast should be given. The children can compare their food with that which we have for our Thanksgiving Day dinner. In connection with this work the stories of other brave people will be told. These stories will be selected with special reference to certain traits displayed by individual children in the hope that they may unconsciously be influenced by their great interest in the ideals presented.

Another interesting exercise for this time of year is a study of our common food products. Let the children discuss and investigate the preparation and transportation to the market of the foods which they have seen at the farm. They will make a list of the foods which they eat every day, going as far into the study of the sources, uses and constituents of the foods as their interest and experiences will allow. If it seems advisable the relative value of different foods, their cost, abundance, source, etc., etc., may be included.—*Chicago Normal School Leaflets.*

CONSTRUCTIVE WORK FOR THE PRIMARY GRADES.

In the kindergarten the children are interested chiefly in the home. They are asked, therefore, to make a number of simple things—chairs, tables, piano, picture frames, etc.—for their playhouse, which in its turn, was made for them by the eighth grade boys.

In the first grade the children hear in its simplest form the story of Hiawatha, and they make his canoe, his bow and arrows, his wigwam, and the clothing that he wears.

In the second grade the children hear about primitive man, the simplest of human beings, living in the midst of nature. How is he to obtain food? How provide his shelter? How make the clothing that he needs? They are called upon to face some of the problems that he faced when civilization was young, and they are encouraged to make some of his simple inventions in trying to solve these problems.

In the third grade the children read about Robinson Crusoe, the modern man who was obliged to live under primitive conditions: who knew what to do and how to do it, but had no tools and no helpers. He had to provide food and clothing and shelter for himself, and to make his own tools, and his own weapons. The children make his island, his raft, his hut and his tools, and many of the simple utensils that he used during his stay on the island. Again they are helped to realize (1) what are the needs of man, and (2) how these needs may be supplied even when tools and machinery and books and a multitude of men, on which we are accustomed to rely, are wholly lacking.

In the fourth grade the children continue the study of man and his needs, and in their constructive work they make from various materials, plastic and otherwise, articles which are more advanced in architecture, in decoration and invention. Their history is the story of the city

and state in which they live, and their attention is called to the industries and occupations of men who live in their own time and in their own neighborhood.

In all this constructive work the teacher is trying to develop in the mind of the child a clear image to correspond with the objects or the situation described in the class in reading or history or nature study. The child thinks in images or pictures; and if the image is clear the thought will be clear.—*Richard Waterman.*

THE GOSSIP OF THE NUTS.

Said the Shagbark to the Chestnut;
"Is it time to leave the burr?"
"I don't know," replied the Chestnut,
"There's Hazelnut—ask her.

"I don't dare to pop my nose out
Till Jack Frost unlocks the door;
Besides, I'm in no hurry
To increase the squirrel's store.

"A telegram from Peanut says
That she is on the way,
And the Pecan Nuts are ripening
In Texas, so they say."

Just here the little Beechnut,
In his three-cornered hat,
Remarked in tiny, piping voice:
"I'm glad to hear of that;

"For then my charming cousin,
So very much like me,
Miss Chinquapin, will come with them,
And happy I shall be."

Then Butternut spoke up and said;
"'Twill not be long before
I'll have to move my quarters
To the farmer's garret floor;

"With Hickory and Walnut
Good company I'll keep,
And there until Thanksgiving
Together we shall sleep."

Said the Shagbark: "I am tired
Of being cooped up here;
I want to go to see the world;
Pray, what is there to fear?

"I'll stay up here no longer,
I'll just go pouncing down;
So good-bye, Sister Chestnut!
We'll meet again in town."

—*Nature in Verse.*

IDEAL PLAY.

What is play? Let us go to the child to find out. Froebel went to the child to learn. Christ told us: "Except ye become as one of these little ones, ye cannot enter into the kingdom of heaven." Why did our Savior give us a child as our type? Because of the child's simplicity of nature. He is natural, not artificial. First, then, a child does not acquire, or allow, artificial conditions when he plays. He is natural himself, and he wants everybody else to be. If, therefore, you wish to join him in his play, be a child with him, or step aside and let him play with his fellows and mates; do not "spoil the fun" by being a discordant element. Ah! then fun is a necessary element in play is it? What proof have we of this? The child himself. Watch a crowd of little people gathered expectantly together for a soap-bubble party. I hear some one exclaim: "Do they ever play soap-bubbles in the kindergarten?" Certainly, comrades, do we not? Is the soap-bubble not the most perfect representation of the sphere, adding to the joy of its perfection of form the perfection of prismatic beauty in its coloring, and, best of all, an act of creation on the child's part, at least an act of will and action on his part? And when we have will and act combined, we have all the force of creativeness, Froebel's highest instinct in his ladder of seven.

* * *

Children are much nearer the truth than we, for their instinct is to give themselves up to full, vigorous activity. Froebel tells us the first instinct on which his system is based is the "instinct of activity. Activity means growth, be it of body, or mind, or spirit. Anything done is a training, for better or for worse, for good or for evil. We are told we possess over four hundred muscles; allow these muscles to expand and great blood pressure ensues, thus ensuring good circulation; if we all possessed good circulation of the blood none of us should be sick. It is because of the too great rush of blood to the brain, the imperfect circulation—from every cause, beginning with mind and ending with matter—that our little ones who have been frightened, or scolded, or are hungry, or cold, or sick are called "naughty." Bring them to the kindergarten and let them play. Play with them; how quickly smiles chase away tears, little hands and feet get warm, cheeks get pink, eyes shine, while merry laughter is so infectious that visitors and children are sympathetically one.—*Susan Plessner Pollock at N. E. A.*

MATHEMATICS.

EDITED BY

ROBERT J. ALEY, Ph. D., Bloomington, Indiana.

HISTORY OF ARITHMETIC.

XVI.—NOTED ARITHMETICS.

(1) The Ground of Arts.

There is some evidence that this book was first published in 1543, but 1561 is the date given by DeMorgan. Dr. Peacock places the date at 1542. The book passed through many editions. Chapters on various subjects were added by the different editors. The original was not changed and was always sacredly printed in black letter.

The author of this remarkable book was Robert Recorde, an English mathematician, born at Pembrokeshire about 1500. He studied both at Oxford and Cambridge, taking the degree of M. D. at the latter place in 1545. He was the physician to Edward VI. and to Queen Mary. Besides writing an arithmetic he was the author of a work on algebra and a work on astronomy. He was the inventor of the equality sign.

The book here described is the edition printed at London 1618. The opening part of the title page reads as follows:

The Ground of Arts—Teaching the Perfect worke and practise of Arithmeticke both in whole Numbers and Fractions, after a more easie and exact forme than in former time hath beene set foorth; Made by Mr. Robert Recorde, Dr. in Physicke.

A long dedication in a stilted style is addressed "To The Most mighty Prince Edward the Sixt by the grace of God, King of England, France, and Ireland, &c." This is followed by a "Preface to the Reader," in which the author makes a strong argument for the merits of his book.

The matter of the book is in the form of a dialogue between the *Master* and the *Scholar*. It opens thus:

Scholar.—Sir, such is your authority in mine estimation, that I am content to consent to your saying, and to receive it as truth, though I see none other reason that doth lead me thereunto; whereas else in mine own conceit it appeareth but vain, to bestow any time privately in learning of that thing that every child may, and doth learn at all times and hours.

Master.— * * * Wherefore in all great works are *Clerkes* so much desired? Wherefore are *Auditors* so richly fed? What causeth Geometricians so highly to be enhanced? Why are *Astronomers* so greatlie advanced? because that by number such things they find which else would farre excell man's minde.

The above extract is typical of the book's style. The Master always gets the better of the Scholar in the argument.

As the Arabic notation was then new to the English world it receives a long and careful treatment. Addition of simple and denominate numbers is very appropriately treated in the same chapter. The proof of addition by casting out the *nines* is emphasized.

The definition of multiplication is rather curious: "Multiplication is an operation that two summes produce the third, which third sum so many times shall contain the first, as there are unites in the second. And it serveth insteade of many additions." Although the multiplication table is given in an excellent and compact form, the author urges the use of the difference method [presumably to save the mind the effort of retaining the larger products of the table. If the product of 7 and 9 is wanted, the numbers are arranged as follows: $\begin{smallmatrix}9\\7\end{smallmatrix}\times\begin{smallmatrix}1\\3\end{smallmatrix}$ The second is respectively 10–9 and 10–7.

The product is found by taking the product of the numbers in the second column for units, and the difference along either line of the cross for the tens. Thus, $\begin{smallmatrix}9\\7\end{smallmatrix}\times\begin{smallmatrix}1\\3\end{smallmatrix}$. Similarly 8×7 would appear $\begin{smallmatrix}8\\7\end{smallmatrix}\times\begin{smallmatrix}2\\3\end{smallmatrix}$ &c.

$$\underline{63.}$$

$$\underline{56.}$$

In division the old Galley method, already described in these columns is fully exploited. No hint of any other form of division is given. The fundamental operations are followed by Reductions and Progressions and then comes *The Golden Rule*, "Whose use is, by three numbers knowne, to find out any other unknowne, which you desire to know. If you pay for your board for three moneths sixteene shillings, how much shall you pay for eight moneths?" The author says select the two numbers of the same denomination and write them thus, $\begin{smallmatrix}3\\8\end{smallmatrix}\mathrm{Z}$ placing for the lower number the one that the question is asked of and set the other number 16 against the three, thus $\begin{smallmatrix}3\\8\end{smallmatrix}\mathrm{Z}\,^{16}$. Now multiply along the diagonal and divide by the other number.

Counting by counters or Palpable Arithmetic

receives full treatment. The author gives it that it may "not only serve for them that can not write and reade, but also for them that can doe both, but have not at some time their pen or tables readie with them." It is simply a full setting forth of the kind of arithmetic in use before the introduction of the Arabic notation. The latter came into use so slowly that text-book makers deemed it necessary to give both methods in their books.

We will close this description by giving the Rule of Falsehood.

"Gesse at this work as hap doth leed,
By chance to truth you may proceed.
And first worke by the question.
Although no truth therein be don.
Such falsehood is so good a ground
That truth by it will soon be found.
From many balt too many, mo,
From too few talke too few also;
With too much joine too few againe;
To too few adde too many plaine.
In cross-wise multiply contrary kind,
All truth by falsehood for to find."

THE NEW ARITHMETICS.—IV.

In using any mathematical text it is very necessary to know how to solve the problems. Some of the problems in the advanced arithmetic are quite difficult. From the number of inquiries received it seems wise to give in these columns the solution of a few of the very difficult ones.

Prob. 18, page 326.

What is the diameter of a circle that will just enclose four silver dollars arranged in the form of a square?

If the four circles (silver dollars) are arranged in the form of a square, their centers A, B, D, E (Fig. 1) form a square, each side of which is the diameter of one of the circles. Let us call one side of this square, d. B D E is a right-angled triangle, and the square on the hypotenuse is equal to the sum of the squares on the other two sides,

Hence $E\,B^2=B\,D^2+E\,D^2=2d^2$

$E\,B=\sqrt{2d^2}=d\sqrt{2}$.

G F, the diameter of the required circle is equal to E B+B F+E G.

Therefore $G\,F=d\sqrt{2}+\frac{1}{2}d+\frac{1}{2}d$

$=d\sqrt{2}+d$

$=d(\sqrt{2}+1)$

$=d(2.414+)$.

Hence the arithmetical rule for such problems is, multiply the diameter of the given circle by 2.414+ and the result will be the diameter of the required circle.

The diameter of a silver dollar is 1½ inches. $1\frac{1}{2}\times2.414=3.621$.

Problem 29, page 327.

What is the diameter of a circle which will just enclose three silver dollars arranged in the form of a triangle?

If the three circles (silver dollars) are arranged in the form of a triangle, their centers A. B. C. (Fig. 2) will form an equilateral triangle. The center of the required circle is the common intersection of the three altitudes. (See problem 28.)

$B\,O=A\,O=\frac{2}{3}\,A\,D$.

$A\,D=\sqrt{A\,B^2-B\,D^2}$

$=\sqrt{d^2-\frac{d^2}{4}}$ (where d is the diameter of given circle.)

$=\frac{d}{2}\sqrt{3}$

$B\,O=\frac{2}{3}\cdot\frac{d}{2}\sqrt{3}=\frac{d}{3}\sqrt{3}$.

The required diameter is 2 B O+d, which is equal to $\frac{2}{3}d\sqrt{3}+d=d(\frac{2}{3}\sqrt{3}+1)=2.154\,d$.

Hence the arithmetic rules for such problems, is multiply the diameter of the given circle by 2.154.

$1\frac{1}{2}\times2.154=3.231$.

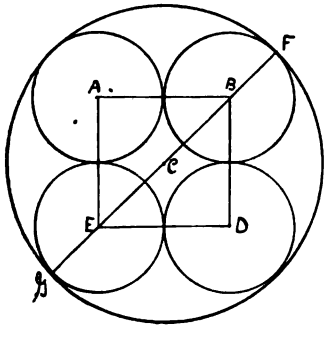


Fig. 1.

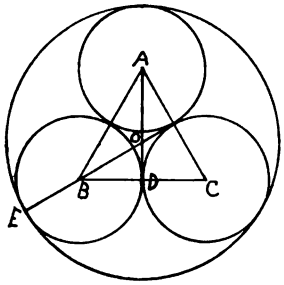
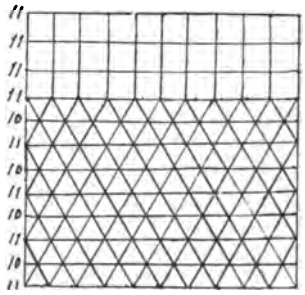


Fig. 2.


Fig. 3.

Problem 25, page 327.

Show that 128 stakes a foot apart can be driven on a ten-foot square.

Fig. 3 shows the arrangement.

By placing the first nine rows so that each stake is at the vertex of a one-foot equilateral triangle we gain one row over the ordinary square arrangement. These nine rows use almost seven feet. There is room for three more rows in either arrangement. Two stakes are gained by using the square arrangement for these rows.

The altitude of a one-foot equilateral triangle is $\sqrt{1-\frac{1}{4}}=\frac{1}{2}\sqrt{3}=.866+$.

$8\times.866=6.928$, the space used by nine lower rows.

No one of these problems belongs to the subject of arithmetic. The solution in every case must rest upon geometry. They may serve a good purpose by stimulating study and by arousing interest in mathematics beyond arithmetic.

HOW TIME IS WASTED IN TEACHING NUMBER.

JOHN B. FAUGHT.

Not long ago a prominent city superintendent of this state said to me that much valuable time is wasted in the teaching of number and arithmetic. This statement was not new to me for I had heard it often before, and I am thoroughly convinced that it is true. When young people, who have been drilled on arithmetic five days a a week at least six months in a year for eight years, and who have had in addition three years training in the high school in algebra and geometry, are unable to solve such a simple problem as the extraction of the square root of the number $2^6 3^4 7^2$ without first multiplying the factors together and then pointing off the resulting number into places of two figures each, etc., then we must agree, I think, that much valuable time has been wasted, at least, in teaching square root.

If we examine the results of the first two or three years work in elementary number I believe we shall find that this waste of time is even greater than in the teaching of the more advanced arithmetic. I have thought, therefore, that it might not be out of place to point out here some of the ways in which time is wasted in teaching elementary number.

The purpose of the teacher in teaching number should be to put the child in possession of the *facts of number* and to enable him to apply these facts in the practical affairs of life. Now, these *number-facts* are to be obtained from objects. No one will deny that objects must be used in teaching number, but in the use of these objects much time is wasted. For example, in a training school for teachers I have seen number-work presented in the following way. The purpose of a lesson was to give the child the number-fact:

$$5+4=9$$

and the teacher proceeded as follows: The children, by the use of cubes, were led to see that

$$5 \text{ cubes} + 4 \text{ cubes} = 9 \text{ cubes}.$$

This was done by putting 5 cubes in one group and 4 cubes in another, combining these groups and then counting. This led to what was called the *appropriate story* as given above. The same process was repeated with toothpicks and the children made the story.

5 toothpicks + 4 toothpicks = 9 toothpicks.

This process was repeated with beans, shoe-pegs, pennies, peas, apples, oranges, crayons. They then passed to pictured objects and found this *number-fact* and it's appropriate story in the pictures of nails, squares, cherries, oblongs, and plums. They next passed to the remembered object and made the story:

5 marbles + 4 marbles = 9 marbles,

etc. for lemons, birds, trees, boys, etc., and finally the children were permitted to reach the generalization that

$$5+4=9.$$

If this were the only lesson presented in this way, or one of a few, nothing need be said against it, but this method of procedure was carried out in every lesson throughout the year, in which the purpose was to give the children a number-fact. By the end of the year they had worked out and were supposed to be in possession of all the number-facts or relations belonging to the numbers from 1 to 10.

In the first place, this method raises the question whether a number of different kinds of objects should be used in teaching number or not. If on entering school, the child is not conscious of the fact that if

$$2+3=5$$

is true for cubes then it is true in general, then a number of different kinds of objects must be used until he reaches this generalization. After that it is certainly a waste of time to use more than one kind of object to discover a number-fact. I believe that the average child of six who is able to count either with or without objects has already reached this generalization, although he may be unable to state it in the form: "The number of things in any group of distinct things is independent of the characters of these things—[1].

[1] Number systems of algebra by Fine, p. 3.

The above method rests on another fallacy; viz., that in reaching an abstract number-fact the child must think it first in the *present* object; second, the *pictured* object; third, the *remembered* object and finally in the *abstract*. As a matter of fact if children are properly taught to count, they will discover many facts of number without the use of objects at all.

Much time is wasted in teaching number by attempting to work out all the relations of a number when it is first presented, and before something of higher numbers is taught. It is a very common opinion among teachers that it is wrong for the child to hear of seven, for example, before the possibilities of six are exhausted. Now some of the relations of six are much more difficult for the child to comprehend than to count a hundred or to add and subtract numbers larger than six. A systematic course in counting should form the child's first introduction into number, and not a consideration of *each number*.

(1) As a whole.
(2) As to the relations in it.
(3) In its applications.

The child's first notion of the number system should be that of an *ordered sequence*, that numbers precede and follow each other. That seven, for example, follows six and precedes eight, is the second after five, and third before ten, etc. This conception of the number system can be obtained only by counting forward and backward, by ones, twos, threes, etc.

Time is wasted by presenting number-work so as to cultivate observation, i. e., to train the eye, ear, and hand. If we except the training of the latter in making the symbols that are used to represent numbers, it is quite obvious that number from its very nature is not suited to the training of the senses. Now I am not opposed to the training of the senses but I am opposed to the training of the senses under the name of number-work. If it is found convenient to use numbers incidentally in training the senses no objection can be made, but it should not be called number-work for that reason.

Another way in which time is wasted is in having the conditions of problems expressed by pictures of the objects named. Thus, if the problem is about birds, birds must be drawn; if it is dollars, circles are to be drawn; if nails, nails are drawn, etc. This is done, it is urged, to make the work more concrete, but the purpose should be to get away from the concrete. To think numbers in the abstract should be the aim of all number teaching. In the above case straight marks or dots would serve all purposes just as well as birds, circles or nails, and have the advantage of being much more quickly made. It may be argued that the pictures of the objects are used for the sake of interest, but the interest should be in the *number* and not in the *object*. Use the concrete if you must, but get away from it as soon as possible.

I have mentioned only a few of the ways in which time is wasted in teaching number. If I were asked to state, briefly, how to save time in teaching number I would say (1) teach the child to count, with and without objects, forward and backward by ones, twos, etc.; this gives him the means of discovering the facts and relations of numbers. (2) help the child work out the facts of number, and then by judicious drill see that they become a part of him, and (3) lead him to think numbers and number processes and relations in the abstract as soon as possible, i. e., minimize the use of objects.

BLOOMINGTON, IND., Oct. 16.

NOTES.

The Open Court Co. of Chicago are doing mathematics good service by issuing a series of books dealing with the Logic and Philosophy of the subject. These books are reprints of old and famous European texts. They have stood the test of time. It is a great thing to have them put in attractive form and made accessible to the modern reader. The latest issue in the series is DeMorgan's *Elementary Illustrations of the differential Integral Calculus*. No subject presents greater difficulties to the beginner or to the non-mathematical student, than calculus. DeMorgan, in his masterly manner, has cleared away many of the difficulties. Every one desiring an introduction to calculus should read this book. The teacher of the subject will find in this book much splendid material for class use.

The Mathematical Section of the State Teachers' Association is arranging for a most valuable and interesting meeting. The program is as follows: M. V. Ganz of Noblesville High School—"What Points Should be Emphasized in High School Mathematics?"

E. C. Welborn, Anderson High School—"Interpretative Devices in High School Mathematics."

C. A. Waldo, Purdue University—"Mathematics and Progress."

Every teacher of mathematics, and every one interested in the subject should arrange to attend this meeting.

THE TOWNSHIP INSTITUTE.

FOURTH MEETING.

NOTE—It should be borne in mind that the outline on Organic Education is based upon Miss Scott's book by that title, published by D. C. Heath & Co., 90 cents, and the outline on Reading upon Professor Clark's *How to Teach Reading*, published by Scott, Foresman & Co., 75 cents.

HOW TO TEACH READING IN THE PUBLIC SCHOOLS.

OUTLINE.

I. What effect has the study of the first four chapters had upon your teaching? Upon your pupils?

II. THE MENTAL ATTITUDE OF THE READER. (Page 117).
 a. Summarize the discussion of the first step.
 b. What suggestions can you offer to make this step effective?
 c. Why does the first step include all the others?

III. THE SUCCESSION OF IDEAS. (Page 132.)
 Grouping has already been discussed at the first institute.
 a. How will the study of this step improve the reading?
 b. Read aloud the illustration on p. 132.

COMMENT.

We have spent three months in the study of the first four chapters, an amount of time apparently out of all proportion to the number of pages read. But if I am not mistaken, the careful and detailed study of those chapters has revealed the fact that the art of teaching reading must find its true basis in a complete grasp of the criteria of expression and their underlying psychology. These criteria cannot be discussed in a few sentences, nor can the far-reaching influence of their thorough comprehension be appreciated in a few days or a few weeks. The teacher can now understand why their presentation has been so exhaustive and also the necessity for the frequent repetition and the multiplicity of detail and illustration.

What, then, have we learned? That vocal expression is a composite, each part of which has definite and invariable associations with attitudes of mind. The rate of utterance depends upon the amount of thinking, or, one might say, upon the rate of thinking: the melody upon the motive, and so forth. With this fundamental knowledge the teacher is now in a position to determine exactly the source of error, and to apply the proper remedy.

Success in teaching depends very largely upon the atmosphere of the classroom. Everything should be done to make the children bright, cheerful and happy—for the imagination cannot work except under such conditions. Ventilate the room, sing a hearty song, stand up and exercise for a few moments. Don't have a reading lesson at the close of the morning session when the child's brain is tired and his power of attention is reduced to a minimum. In every way have the pupils feel that the period devoted to reading is one of the most important of all. A great encouragement to the reader is had when the class and teacher follow him with closed books. This plan increases the responsibility of the reader, thus tending to stimulate his imagination, and consequently his vocal expression. But there is another important benefit; it trains the listener's power of attention and compels him to use his imagination or lose the picture and the story. Again, it is a good practice to have the class turn in their seats so as to face the reader, and it is equally good to have him come to the front and read to the class. In a word, any reasonable plan to impress his responsibility upon him must be conducive to improvement in the reader.

Good reading by the teacher is a great incentive to children. The stream of good reading by the pupils is not likely to rise much higher than the source—the teacher. I do not mean that the pupils should imitate literally the vocal manner of the teacher but the spirit of good reading is certainly infectious, and the class will surely read better for the vital, expressive reading of the teacher.

Again the reading of dialogue is very beneficial. Let the various speeches be assigned to different pupils and let them *read* (not recite) them one to the other. By this practice the *reality* of the reading lesson will be borne in upon the class. As I have stated frequently reading aloud is a perfunctory and often an automatic task. By the plan above suggested the members of the class will learn practically that the printed page is but a record of living thoughts, which can and must be made to live again in the voice of the reader.

Lastly, let us not aim to cover too much ground in a short time. After the selection has been read on a given day, let it be read again on a succeeding day, giving each pupil an opportunity to read long paragraphs, and if the selection is short, let each read it in its entirety. One day in each week, say, Friday, should be devoted to reviewing the reading lessons of the week, and occasionally the best selections of preceding weeks. If this advice is followed for

a month, I can promise results that will be more than encouraging. Good reading requires that one shall be sure of his selection, and this assurance can come only through that familiarity with the text that in its turn can come only through repetition.

S. H. CLARK.

HISTORY.

OUTLINE.

1. Study the early life of the Teuton as shown in the story of Wulf, especially emphasizing the great love of *personal* liberty which the Saxon had.

2. Study Feudalism and show how this Teutonic love of liberty broke all Europe up into small parts for a time into feuds. Show the disadvantage to commerce (Business Life) and to government (State Life) this division of Europe into little feudal holdings was.

3. Study the Crusades. (a) Show how the crusades helped to break down feudalism. (b) Show how the crusades helped to wake Europe up to new ideas of business in commerce, manufacturing and and agriculture. (c) Show how the crusades broke down the small feuds and made it possible to build up *modern nations*. (d) Show how the crusades brought about new intellectual ideas and ideas of culture to Europe. (e) Show how all this movement will help to bring about a *new life* in Europe.—The course of study.

4. The Renaissance. (a) Show that the Renaissance meant that the race was trying to gather up again all of the valuable things that had been worked out in all the past—as the Roman law developed by Rome, Greek art developed by Greece, Christianity, whose roots run deep back into the history of the Jews.

5. Study the fruitage of this new life as shown in the Reformation, and show that Spain took up into its life least of the new life which the Crusades, the Renaissance and the Reformation was developing: France likewise crushed out the new life, especially as to religion, while England more and more took it up. This will prepare the teacher and pupil to see which of these three powers will bring the *newest* ideas to the *new world*.

Good books for use in preparing this work:

Myers' *Mediæval and Modern History*, Guizot's *History of Civilization*.

An Introduction to the Renaissance by Field, published by Scribners

Era of Protestant Revelation, by Seebohm, published by Scribner's.

COMMENT.

The field covered by the history work in this institute is intended to be the field which is to be covered in the school by the fifth-year and the sixth-year pupils. It is intended to present some of the leading ideas which are to be developed through these two grades, and to help the child see how that age which is generally called the Dark Age is not dark if truly interpreted. A grain of corn covered up in the soil in the early springtime is growing just as truly as it is after it pushes through the soil and its growth can be observed. Likewise, after Rome had fallen (476 A. D.) and was covered over with the barbaric Teuton it looked for a time as if all the great law of Rome, and the art and literature of Greece, which Rome had partly taken up, was to be destroyed by this barbaric Teutonic world. But this was not so. The Teuton overran all southern and western Europe, and with his intense love of individual local liberty set up finally, states of his own: England, France, Germany, Spain, Italy, and he set these up by learning lessons of government and state organization from his old Roman teacher. But in setting up these states he did not simply copy the Roman notion of government, he took the Roman notion (a strong, central government) and joined with it his own notion (strong local government) and this brought about feudalism. So, in the fifth grade, the children in our schools ought to see that feudalism is Rome still living on through the Middle Ages but modified and improved by the idea of the Teuton. This same thing is to be seen, likewise, in studying the growth of Christianity through the Middle Ages. All over western Europe sprang up individual monasteries, and at the first each monastery very largely controlled its own life. This was the growth of the Teutonic spirit, but slowly through the thousand years of growth, from about 500 A. D. to about 1500 A. D., step by step the Christian church became closely organized with its center at Rome and all monasteries and peoples of Europe looked to Rome for guidance and authority respecting religious matters. This was, again, the old spirit of Rome (strong central government) gradually making itself felt throughout all the Middle Ages. But the Reformation of the sixteenth century was the assertion of the Teutonic spirit (the right of individual opinion and government).

Likewise in art and literature, if we look at the Teutonic world from about 500 to about 1100 we shall find it caring very little, either for art or literature. But as the Teutons became better organized, both in government and religion, it came to think more about art and literature and this brought about what is called the Renaissance which was nothing more than Greece and Rome reappearing again in the Teutonic life along in the thirteenth and fourteenth centuries. But again, the revival of literature and art was not merely the spirit of the freedom-loving Teuton, but a revival of old life by the inbreathing. Finally, at the close of the sixth grade work the pupil is to be led to see that these two ideas, the love of order and strong government, as represented by Rome, and the love of individual liberty and freedom, as represented by the Teutons, with all that this implies in the

way of free government, free religion, free industry, art, literature and equality of social position, was making itself manifest through the life of England in a vastly greater degree than it was through France or Spain. In other words, he is to see that England catches up and incorporates into its life the union of Rome and the Teutons; but that what France takes into its life, chiefly, is only the old Rome spirit. ("I am the State" said Louis XIV.) That Spain was unable to embody in its life the Teutonic and Roman ideas, but caught up the old central government idea and almost wholly failed to catch the Teutonic idea of individual liberty. This work, then, prepares the pupil for taking up the first great field of American history; namely, the struggle of the Spanish, the French and the English for the New World and it will enable him to see, finally, why, in this struggle, England, who represented the fullest life in all the past, pushed the other two out of the road and mastered the New World from the Atlantic to the Pacific.

ELWOOD W. KEMP.

II.—ADOLESCENCE.

OUTLINE.

The mind goes through its adolescence as well as the body. Previous to the change, the child enjoys peace, its functions are regular and all its energy is expended in gaining knowledge of things about—outside of itself. The child gradually leaves its habitual activities and vivacity and at times gives up to a kind of languor and indolence The child retires within itself; the mind becomes restless and troubled, although no cause can be given. Melancholic reverie, vague longings and desires which are felt rather than expressed; dread of society and love of solitude characterize the opening of the period.

The imagination furnishes the mind with what before the external world gave. Indifference to care of parents, teachers and fr'ends; prefers the friendship of a few staunch friends of the same age; sometimes selects questionable companions. There seems to be a lack of spiritual coordination, the soul seems perplexed—disturbed and seeks solitude or counsel from those in the same condition.

EFFECT UPON THE GIRL.

In young girls there is often a feeling of resentment because of the condition of things; boys, she thinks, have the advantage. This feeling may become rebellious and cause not only herself, but her parents, friends and teachers a great deal of concern. When she comes to a realization of the meaning of all this change, she arms herself with resignation and patience and eventually takes the outlook of womanhood.

THE EFFECT UPON THE BOY.

An understanding of the change is apt to produce quite the opposite effect upon the boy, He becomes self-conceited, self-satisfied, self-important, the world is "easy" for him; he overestimates his powers; there is much planning and scheming.

THE WILL.

The will is shaken by the storm and stress of the change. It makes an effort to resist the encroachments of nature, hence sensitiveness is sometimes excessive. The new impulses coming from the sexual instinct rise and control the will unless the child has been well prepared for the assault upon his moral nature. Too much stress cannot be laid upon this phase of the subject.

COMMENT.

Adolescence represents the third stage in the life of the individual. He has been born, has lived through his periods of infancy and childhood and has been born again into a new life physically and spiritually. This new birth has brought new bodily conditions, and has set him wrestling consciously with the problems of life striving to get his bearings in the serious struggle that is to come. The coming into the consciousness of the "realness" and "earnestness" of life is an important phase of one's development. The realization may come gradually and quietly, and the life may be tranquil and undisturbed. If the physical and spiritual health of the child has been made secure the chances are that this new birth will be attended by no serious experiences. If the early life and training have been out of harmony with childhood and the child has been made old prematurely, and has come to this new time shattered in nerves and unfit to undergo the evolution of this period, the chances are that days and years of doubt and trouble and struggle will be his lot.

One of the best things that child study has done for humanity is to be found in the increased earnestness of the teacher to know sympathetically and understand fully the child with whom he is to deal. It has done much to put teaching upon a higher plane of life. It has made teachers conscious of the fact that the boys and girls are to be men and women, and has brought home to them with almost startling revelation the fact that in order to be the best men and women, the boys and girls must have the best care in body and soul. It has opened teachers' eyes and made them see and observe. It has shown them the close relation of school and home and of school and life in the other institutions.

Now, if the same earnestness that has characterized child study and has cleared the atmos phere in the grades, and has all but brought a new day to teaching, can be pushed on into the secondary schools and through colleges and universities the first great movement of educational regeneration will be complete. The one great thing to be constantly reiterated is that school-teaching is a life process and that it involves all the factors that pertain to life in every individual case. The teacher may be learned and scholarly and as dry and cold-blooded as a cyclo-

pedia. It takes something more than facts to be a teacher. It takes genuine sympathy and a knowledge of human nature to strike fire out of human souls.

The period from the time the child enters the high school till long after he has completed his school life generally is the period under discussion. It is the waking time of life in body and soul. It is the timid time of life. It is the dreamy air-castle building time of life. It is the period of life when the subtle emotions are setting into dispositions and dispositions are becoming character. The rapid-growing boy and girl need a firm guiding hand in the teacher. Is his zeal to be restrained and kept in bounds the alert teacher will make the discovery. Is his rapid growth sapping his energy so that he needs more sleep, more open air and lighter work in lessons the keen eye of the teacher will detect the need in his life. Has sickness incident to this period overtaken him, upon his return to school a word of sympathy and encouragement will lighten his burden. Is he shy and tending toward a retiring disposition, the wise teacher will in this time bring in to play his skill in enlisting the good offices of the parents in the work to be done.

The plea for a study of adolescence is a plea for bigger men and women as teachers, with bigger souls to sympathize, and bigger capacities to understand, and bigger insight into human nature. It is a plea to make life and conduct the ends in education and to make knowledge and secular success means. It is a plea for conscientious, earnest, observing work in all schools from kindergarten to university, the kind of work that guides infants into childhood, childhood safely into adolescence, and sets the feet of the adult in ways unerring. And it is no new problem. History and literature are full of examples and descriptions of this new birth in men and women. The pages are full of dreamy times, of loves, and hates, and doubts and longings, and hopes and ambitions, of failures and successes, of sorrows and joys, of laughter and tears. Life is made up of such as these and this new time is one of adjustment to life's realities.

What may be done in the study of this period of life? This seems to be the important question. The large majority of the teachers who make up the membership of the township institutes are in this stage of life and many of them have the larger part of it to live. These must study to know themselves. They can do this by recalling their own experiences from the beginning of the adolescent period, and by a close study of their present experiences. Knowing themselves they can turn to their pupils more sympathetically and more intelligently. The study of the pupils will call for good common sense. Nothing startling is to be looked for or expected. Indeed, nothing is to be looked for. The proper attitude of the teacher may be stated in this way: "I am here pledged to do the best I can for every pupil under my charge. In order to do this I shall need to study the complete life conditions of each one. I must care for him physically and spiritually. I must have the fullest knowledge of him and must have his confidence and cooperation." Having done all that he can do himself in these directions, he has still another mighty source of strength in the parents with whom he should hold frequent consultations; they may furnish important data, and the teacher in turn ought to be able to bring many valuable suggestions to them.

In addition to these modes of procedure the teacher should inform himself on the literature of the subject, and should study character in history and literature for a better understanding of the period of life in question. The fact that much of the literature of the subject is inaccessible to very many of the teachers is a difficulty that presents itself. We present here a partial bibliography, and in some future articles we shall try to present some of the best thoughts from these references and others. If the teachers will write us their difficulties we shall be glad to make these columns as helpful as possible to them. Possibly a study of the early life of such characters as Savonarola, Shelley, Henry Ward Beecher, Gœthe, George Eliot, Tolstoi, Rousseau, Hawthorne, John Stuart Mill, and Joan of Arc may aid in an understanding of the question. These are among the names suggested by E. G. Lancaster in his article in Vol. V of *The Pedagogical Seminary*. We have this suggestion to make, however: these were no ordinary people and the emotions that surged in their breasts must be explained in their lives. The inference is that every individual must be studied in his own environment.

The following references will be found helpful:

The Pedagogical Seminary:

Vol. I, p. 174; The Study of Adolescence, by Wm. H. Burnham.

Vol. I, p. 196; The Moral and Religious Training of Children and Adolescents, by G. Stanley Hall.

Vol. III p. 469; Effect of High School Work upon Girls During Adolescence, by Helen P. Kennedy.

Vol. V, p. 61; The Psychology and Pedagogy of Adolescence, by E. G. Lancaster.

The American Journal of Psychology:

Vol. VI, No. 1; The New Life: A Study of Regeneration, by Arthur H. Daniels.

The Educational Review:

Vol. IX, p. 135; Values in Secondary Education, by W. B. Jacobs.

The Forum:

May '94; Article by G. Stanley Hall.

Addresses and Proceedings of the National Educational Association, 1897:

The Psychology of Puberty and Adolescence, by Colin A. Scott.

The Study of Children, by Dr. Warner, chapter X. Macmillan & Co., New York.

The articles by Burnham, Lancaster and Scott are especially valuable.

F. M. STALKER.

[The following well expressed thoughts on this subject are selected from Dr. S. H. Rowe's recently published book. *The Physical Nature of the Child.*]

The increased blood supply has a more important function, however, than is shown in these results of physical change. The rapid building up of the physical puts the whole body on the qui vive for excitement. This tension should be relieved by activity in some direction which will contribute to both present and future happiness. The period of adolescence marks both the heights and the depths of the soul's strivings. It is the time when ambitions and ideals of widely divergent type force themselves upon the normal individual. Sixteen is the age of the largest number of conversions. At almost the same age the worst and largest number of crimes are committed.

* * *

The increased size of the heart and the calling into play of cerebral centers not before active must naturally enlarge the scope of the child's interests and awaken in him abundant tendencies to activity. Strong feelings now in this direction, now in quite another, are characteristic. A marked changeableness and reaching out in the direction of future ambitions and hopes are peculiar to this age. The lives of most prominent educational reformers show this changing but vigorous groping tendency to activity now physical, now mental, at one time practical, at another reflective. Reports of adolescents have testified to this dream life, a phase peculiar to adolescence.

The contrast between the real and the ideal life leaves the child naturally to wish to work out from his own experience and make real without restraint the life of his dream. Hence arise the love of roaming, of truancy even, and the liking for solitude—all these representative of the new life which has been excited in the child by the changes of his age. To this same cause is probably due the apparent irresponsibility of children at this age. It does not necessarily mean that the child is getting more careless or more depraved, but rather that a new and wide field of knowledge is the scene of his real interest and mental action. Consequently the old takes on less of importance in the light of this wider, newer, intenser light.

* * *

Growth, though rapid, is at no time more easily arrested than at adolescence. The important questions are: Has the child educative and healthy activities to serve as safety valves for his energy? Has he ambitions and ideals to which he may devote himself? Has he dangerous tendencies from which he must be saved by turning the direction of his action toward recreations or serious pursuits, which not only interest, but appeal to his higher nature?

IV.—ORGANIC EDUCATION.

OUTLINE.

The study of Chapter VII and the first illustration in Chapter VIII (pages 59–95). (First read Chapter VII as a whole in search for the dominant doctrine of the "practical work," and then read and reread the text on the work of "Grade B" until the spirit of the procedure is grasped and the principal divisions and subdivisions are made the possession of the mind.)

1. Chapter VII.
 - a. The advantage of considering the outlines as "suggestion sketches" rather than rigid definitions. (See pages 59–61.)
 - b. The design of the headings, such as Appearance, Clothing, etc. (Page 62.)
 - c. The work in nature. (Pages 63–64.)
 - (1) Purpose.
 - (2) How accomplished.
 - d. The scope and the mode of "Comparison." (Page 64.)
 - e. The nature of the work under "measure." (Pages 65–67.)
 - (1) Point out accurately all the thoughts in this topic.
 - f. The work under "expression." (Page 67.)
2. Chapter VIII—Hiawatha.

 Grade B 1.
 - a. Arrange the distinctions under "A. Analysis of Character" (page 68) into mental traits and results, as
 - (1) Mental traits:
 - (a) The dawning of mental life.
 - (b) Sense hunger the dominant interest.
 - (c) Tendency to be spellbound by that which interests, etc.
 - (2) Results:
 - (a) Senses sharpened.
 - (b) Observation exact, etc.
 - b. Systematize the points given under "B. Ethical

Aims" (page 70) as a standard for the consideration of the ethical aims in other grades.

c. Notice under "I. Character" (pages 71, 72) the use of the material, the consideration of both the positive and the negative, and the valuable references.

d. Under "II. The Appearance of Hiawatha" (pages 72-77), think out

(1) The source of the material given in the "story."

(2) The value of the "comparison."

(3) The scope of work in arithmetic that would be mastered. For example, in measuring the height they would learn the foot, the inch, and perhaps divisions of the inch. Determine this scope with exactness.

(4) The practicability and value of the work suggested under "expression."

(5) The practicability and value of the work indicated under "sense training."

COMMENT.

As has been indicated before, each item in the outline is not to be treated in full. Further, they are not to be discussed, necessarily, in just the order given. Those topics only are to be selected, the consideration of which is deemed to be most helpful.

1. There is to be noticed first, that which may be called the dominant doctrine of the "practical" work. This doctrine is the thought that the child's interests are the predominant thing, and that a given period in the world's development is adapted to these interests and should be analyzed and explained in order to satisfy them and eventually to lead to a higher development.

2. The advantage of considering the outlines as "suggestive sketches."—The outlines are not to indicate exactly the work to be taken. They represent typical forms of work. For example, under "Character," on page 71, it is shown that in dealing with the child's curiosity certain acts that have a positive ethical bearing are to be considered. One of these is Hiawatha's question to Nokomis—"What is that, Nokomis?" Another is his act of learning the language of every bird. The negative act noted on page 71 is that shown in the story of "Goldilocks and the Three Bears." These are not fixed definitions of the work to be done by each teacher. They are suggestive of the kind of work and of its spirit.

3. The relation of the given period to the school year.—On page 68 it is to be noticed that the work on Hiawatha, the Indian Boy is assigned to Grade B I. In this grade the age of the children is from five to six years. The reason that this kind of work is given to Grade B I, in the school under consideration, is that it is thought to be adapted to the interest and to the stage of development of the children. In other schools the whole year might be given to this work. In still other schools one-fourth of a year might be assigned to it. The standard is in the child, and the work must be varied according to the needs of the child.

4. The analysis of character.—The book presents, first under each grade what is called an "Analysis of Character." This is "primarily an analysis of the development of the child at the stage of his life to which the period in question would be assigned." On page 68 there is given an analysis of character. This is an analysis of the development of children at the age of five or six. This development is assumed to fit them for a study of the material under the life of Hiawatha, viewed as a boy. In studying this analysis of character and those given on other pages there should be a separation into the tendencies already developed, and the results that are to be gained by a study of the given material. Accordingly there may be noticed first that the child's development is marked by the following tendencies:

a. It is the dawning of his mental life. Everything appears to him as indistinct. He does not clearly grasp the different objects.

b. His dominant interest is that of "sense-hunger."

c. His nature is such that whatever satisfies him holds him "spell-bound." He is completely under its influence.

d. His mind wandering may be totally unconscious. Being fascinated by the sensuous object, his neglect of the work in hand will have in it ordinarily no intention of wrong doing.

e. His power of inhibition is slight, therefore, his limbs and his body as a whole respond easily to motor impulses.

f. His tendency is to regard an adventure or a daring exploit as the means of getting at some new fact or relation. He is either ignorant of the danger or does not regard it.

g. His tendency is to regard the world as an undivided whole. He does not distinguish it clearly from himself.

h. His tendency is to discover likenesses rather than differences.

i. His affection for all things in nature is strong. He seems to be very much at one with nature.

The results to be gained from a study of this material are these:

a. The process of satisfying his senses renders the senses more accurate and the the sense impressions more clear.

b. Gradually he comes to observe every phenomenon with exactness.

c. He finally acquires the tendency to connect every phenomenon with some antecedent phenomenon. His notion of cause and effect begins to become clear.

d. This creates within him a demand for a larger and a larger range of knowledge.

e. In the pursuit of this knowledge he makes constant experiments. This experimentation gradually prepares him to produce for himself. Thus, like Hiawatha, he constructs certain rude devices in order to accomplish his ends.

5. The ethical aims.—On page 70, in connection with the work on Hiawatha, and on other pages in connection with the work of each period, a very important topic is considered. This is the question of the ethical aim in the work. The inquiry may properly arise, "When does the child begin to be ethical?" In reply it may be said that the pupil begins to be ethical as soon as he begins to perceive that his action is a determining force in the world. When the thought dawns upon him that the affairs of the world are moving along in a certain direction and that his action modifies its direction, he is beginning to be ethical. As soon as the child begins to feel that he is not a mere link in a necessary stream of cause and effect, but that he has the power to turn upon his environment and modify it, his ethical nature has had its birth. It seems, therefore, that the child commences to be ethical as soon as he begins to feel his individuality. Therefore, whatever tends to give him power to decide things, power to work out problems for himself, renders him ethical in a positive way. Whatever tends to hamper his growth toward the good has a negative effect upon his ethical nature. This brings out the importance of noticing carefully the author's statement on page 70—"He is stimulated to answer questions, so far as may be, for himself." "He is left, wherever practicable, to think his own way out of difficulty." Both positive and negative ethical tendencies are noticed on page 71.

6. The various headings as Appearance, Clothing, etc.—It is important to notice that each period is made concrete by a certain type character and that the spiritual development of this character is supposed to reveal itself, to objectify itself, in his very countenance and bodily bearing, in his clothing, in the nature of the school organization, etc. As previously indicated these headings are not to show, in a strict way, the invariable mode of treatment to be employed by the teacher. They are, however, important indications of the manner in which the people of a given period objectified their inner life. Carlyle had something of this thought in writing his work on clothing entitled *Sartor Resartus*. These headings give to the teacher a somewhat distinct and orderly conception of the relations of one period to another, according to the thought of the author. They are also said to be helpful guides in testing the work of the children. Close attention should be given to the explanation on page 62.

7. The work under nature.—A helpful suggestion is given at the bottom of page 63, in indicating that the purpose of the nature study is to exhibit "the value and possibilities of natural environment." A fruitful thought is also presented in the suggestion as to the manner by which this is to be accomplished. It is to be gained "through showing from stage to stage the gradual progress of civilization through the discovery of the adaptation of nature to men's physical, industrial, æsthetic and spiritual needs, and through the study by the children of their own environment."

8. The scope and the mode of comparison.—The comparison reaches in two directions. It relates the life of the given period to the past civilization. It then relates it to the present civilization. It involves a comparison of the following elements: a. Physical conditions. b. Scientific conceptions and processes. c. Industrial activities. d. Social aspects. e. Forms of government. f. The conditions of art. In studying the question of comparison the teacher should note carefully the points under comparison given concerning the various periods, for example, those indicated on pages 77 and 78; on page 160, etc.

9. The work under "Measure."—This work is also comparison. It is, however, a specific mode of comparison. It is that in which the products, industries, etc. of the given stage of civilization are measured by the standards in use at that time. The child is then led to consider these same products, as belonging to his own time, by the standards of his own time. Of this topic a helpful discussion is given on pages 65 and 66.

10. The mode of work indicated under the term "Expression."—It is to be observed that the word "expression" does not signify merely oral and written communication. It indicates not only spoken and written language, but singing, drawing, painting, tracing, cutting from paper, molding, and making in any form. It is to be further observed that the term "expression" does not signify merely imitation. It does not mean merely reproduction. It denotes invention, creation, original work.

HOWARD SANDISON.

SUPERINTENDENTS AT SHELBYVILLE.

The Southern Indiana Superintendents' Club held its annual meeting at Shelbyville, October 19 and 20. Thursday evening, Dr. Burris Jenkins delivered a most interesting and instructive address upon "How to Induce High-School Graduates to go to College." Friday was passed in visiting the Shelbyville schools. Superintendent Tomlin can well feel proud of what he has done in advancing the educational interests placed in his care. He has a strong corps of teachers, and they show their fitness for professional duties by the high character of their work. With an excellent board, a strong superintendent, and a corps of trained teachers, the people of Shelbyville can have every confidence in the results attained. Friday evening the club met to discuss school questions common to our Indiana system of schools. This is a round-table conference, in which each member is at liberty to express his opinion in regard to any question that may be opened for discussion. The club will meet with Superintendent Kerlin of Martinsville at its next annual session.

The following educators were present: Dr. Burris A. Jenkins, President W. W. Parsons, State Superintendent F. L. Jones, D. M. Geeting, C. M. McDaniel, E. S. Monroe, W. E. Alexander, H. C. Montgomery, J. A. Carnagey, W. D. Kerlin, B. H. Wilson, G. T. Roberts, J. W. Walker, E. R. Smith, T. A. Mott, J. H. Tomlin, B. L. Blair.

C. M. McDANIEL.

AMONG THE NEW BOOKS.

Under the title of *Cuba and International Relations* James Morton Calahan, Ph. D., lecturer in diplomatic history, at Johns Hopkins university, gives a critical study in American diplomacy and international relations as connected with Spain and her former colonies around the Gulf of Mexico. In view of recent events, and of problems now pressing for solution, the book is both important and timely. Much of it has a direct bearing upon present conditions in the West Indies, and even in the Philippines. The nature of the subject has led to an extensive consideration of the American policy of territorial acquisition.

This is probably the first book treating Cuba entirely from the standpoint of its position and influence in American history and international relations. Beginning with Cuba's position as a center of Spanish colonial influence in America, the author traces the causes and effects of European wars and colonial policies before 1783; the Spanish policy in the American Revolution; the western demand for an open door to the Gulf; injuries to American commerce in Cuban waters; the acquisition of Louisiana and Florida by the United States; the influence of the Spanish-American revolt; the origin of the Monroe doctrine; British influence in Cuba and Texas; American opposition to foreign intervention; the demands of American slavery interests for expansion; the increased political significance of Cuba after the Mexican war; the irritations produced by Spanish trade restrictions; Colonial administrative policy and diplomatic delays; the unsuccessful attempts of the Filibusterers; the negotiations of Polk, Pierce and Buchanan for purchase; the relations of the United States and the Southern Confederacy to Spain and Cuba during the Civil War; the change of the American attitude resulting from the abolition of slavery; the causes of the Cuban insurrections which began in 1868; American patience, forbearance, and proffered mediation to end bloodshed and long-suffered inconveniences; the steps looking toward interference in 1875–6; and the events looking up to the recent intervention, which came as the logical conclusion of almost a century of American history and Spanish rule in the western continent.

The political conditions in Spain, as well as those in Cuba and America, are presented so far as they have any bearing upon the subject. The author has made a careful examination of original sources. The materials of his work are drawn from a study of several years among the archives at Washington. It is a dignified book, and will prove one of lasting merit. The author is one of Indiana's brightest young men who has been a careful student of history for many years. The volume is published as one of the extra volume series of the Johns Hopkins University Studies in History and Politics. [Johns Hopkins Press, Baltimore, Md., 503 pages, $3.00.]

C. F. P.

Professors H. H. Nicholson, University of Nebraska, and Samuel Avery, University of Idaho, have together prepared a little book of *Laboratory Exercises* with outlines for the study of chemistry. They are intended to be used with any text and are adapted to the average high school requirements. The directions for experiments and the suggestive questions which follow make the book appear well suited as a supplement to the ordinary text-book in chemistry. [Henry Holt & Co., New York, 134 pages, 60 cents.]

FOR THANKSGIVING DAY.

Some hae meat, and canna eat,
And some wad eat that want it;
But we hae meat, and we can eat,
And sae the Lord be thankit.—BURNS.

NOTE.—It is the intention in this series of exercises for the celebration of special holiday season to present something that is in harmony with the occasion. Not all phases of thought and feeling appropriate to the time can be presented, but some one idea will dominate what is attempted. Thus, in this Thanksgiving exercise, the idea of good cheer rather than that of solemnity is selected as more likely to enlist the interest of the child. At the same time the deeper meaning of the day is suggested in such a way as not to be missed. The needs and abilities of the ungraded or district school are also in mind, since, as a rule, teachers in cities and towns are more likely to have material for a program at hand, especially in the way of music. This aim has determined the presentation here of a good supply of music of such a character that the pupils may sing it without an excessive amount of drill. The program may easily be extended or shortened at will. For additional material we recommend especially Kellogg's "How to Celebrate Thanksgiving and Christmas" (E. L. Kellogg & Co., New York), from which we have drawn slightly for this program.—CHAS. M. CURRY.

SUGGESTIVE PROGRAM.

(All the material for this program is given in the following pages. Subscribers may order additional copies of this number of THE EDUCATOR at 10 cents a copy.)

1. SONG:—*America*, by the school.
2. SCRIPTURE READING:—*Psalm XXXIV*, by the teacher or responsively.
3. READING:—*President's Proclamation.* This may be found in any newspaper and should be assigned to a pupil with a good strong voice.
4. SONG:—*Motion Song for Thanksgiving.* This may be sung by a group of pupils or by entire school.
5. READING:—*Governor's Proclamation.* See No. 3 above.
6. SONG:—*Whittier's Corn Song.* See suggestion to No. 4.
7. TALK OR ESSAY:—*Thanksgiving, its history and significance.* This may be by an invited speaker, by the teacher, or by a pupil; or two or three pupils may write, treating different phases of the subject. Material may be found in local papers.
8. SONG:—*The Pie Song*, by a group of boys.
9. RECITATION AND SONG:—*The Spellers*, by twelve little folks. Let them stand in a line each provided with a large letter. These may be made of cardboard. As each recites his couplet he holds the letter in front of him, then lowers it again until all begin to recite the closing stanza, when all hold up the letters thus making the word "Thanksgiving." After each couplet all sing the chorus.
10. RECITATION:—*Thanksgiving Philosophy*, by two or four pupils, each reciting a stanza and all joining in "Here Comes the Turkey Brown" as a chorus. Let the entire school join in last chorus.
11. SONG:—*What Happened.*
12. RECITATION:—*The Pumpkin.*
13. RECITATION:—*The First Thanksgiving Day*, by three pupils reciting stanza about and all joining in first stanza of "Harvest Song" at close.
14. SONG:—*Three Maids of a Housekeeping Turn*, by three girls. If possible, dress alike in long aprons and caps. The first one carries a large spoon and pan, the second, a rolling-pin, and the third, several spice-boxes. The gestures are important and readily suggest themselves.
15. RECITATION:—*The Little Pilgrim Maid.* An interesting plan is to have four little girls recite this in concert. In that case the pronouns may be changed to the plural.
16. RECITATION:—*Thanksgiving Day*, by six boys each reciting a stanza and all joining after each stanza in singing "Heigh Ho! For Thanksgiving Day" as a chorus. The motions to accompany this song are evident.
17. RECITATION:—*A Thanksgiving Song.*
18. SONG:—"*The Harvest Song,*" by entire school.

AN EARLY THANKSGIVING DAY PROCLAMATION.

In regard to the many & extraordinary mercys w^ch^ the Lord has been pleased to vouchsafe of late to this plantacon, vzs a plentifull harvest, ships safely arriued w^th^ psons of spetiall vse & quallity, etc., it is ordered, that Wednesday the 16^th^ day of this present moneth, shalbe kept as a day of publique thanksgiuing through the seual plantacons. And whereas it is found by comon experience that the keepeing of lectures att the ordinary howres nowe obserued in the fore-noone to be dyvers wayes piudiciall to the comon good; both in the losse of a whole day and bringing oth^r^ charges & troubles to the place where the lecture is kept, it is therefore ordered that hereafter noe lecture shall begin before one a clocke in the afternoone.

NOTE—This order was passed at "A Court, holden att Boston, Octob^r^ 1^th^ 1633."

THE SPELLERS.

T stands for *Thank you*, the word that we say
When we remember this Thanksgiving day.

Chorus:

[Tune: Yankee Doodle.]

The turkey brown has come to town
And all he says is *Gobble*.
He struts around with wings on ground
And all the while sings *Gobble*.
Gobble while you have the chance
Turkey, turkey, *Gobble*.
Strut and pose and step and prance
And, if you must, sing *Gobble*.

H is for *Happy*, the way that we feel
Just before eating our Thanksgiving meal.

A stands for *All*, all our family dear
Whom we like with us to help make good cheer.

N for *November*—the sky may be gray,
Yet we are glad and our spirits are gay.

K is for *Kindness*, and if we are good,
Those who are poor shall have some of our food.

S is the *Season* for pudding and pie,
Turkey and dressing and gravy—Oh my!

G is for *Gobbler*, our national bird,
When he is dressed he says never a word.

I stands for *Ill*, which we surely shall be
If we eat greedily all that we see.

V stands for *Vain*, like the gobblers we see—
All right for turkeys, but not you or me.

I is for *Ill*, as you just have been told.
Health is worth far more than silver and gold.

N stands for *Nuts*, hazel—hickory—wal—
Beech—chest—and butter—we love one and all.

G is for *Give*. If we freely receive
So let us freely and willingly give.

ALL (*holding up cards*):

Thanksgiving, thanksgiving, thanksgiving,
So each and all of us call!
For the many good gifts that are ours
From God, the giver of all.

THANKSGIVING PHILOSOPHY.

"Hiss! Hiss!" said the Goose, "They've taken us three
To fatten for Christmas—such songsters as we!
I'll be tough as a goose! It's a sin and a shame!
Be wise, Mister Turkey, and you'll do the same.
"Hiss!" said the Goose,
"I call it abuse!"
"Quack!" said the Duck,
"I call it good luck,

Just think of the dainties they give us to eat—
Such apple-cores, squash-seeds, and gristles of meat!
Let's be off for a lunch; see how fast I can hobble."
But the Turkey only answered with a
"Gobble! gobble! gobble!"

"Hiss! Hiss!" said the Goose, "'tis a sad want of luck!
You don't know a thing; you're a goose of a duck!
A regular quack,—you haven't any brains;
You don't know enough to go in when it rains."
"Quack!" said the Duck,
"'Tis a world of good luck!"
"Hiss!" said the Goose,
"'Tis a world of abuse!"

"Quack! quack!" said the Duck, "what a great goose you are."
"Hiss!" shrilled the Goose, till you heard her afar,
"Hiss! Mister Turkey, the world is full of trouble."
But the turkey only answered with a
"Gobble! gobble! gobble!"

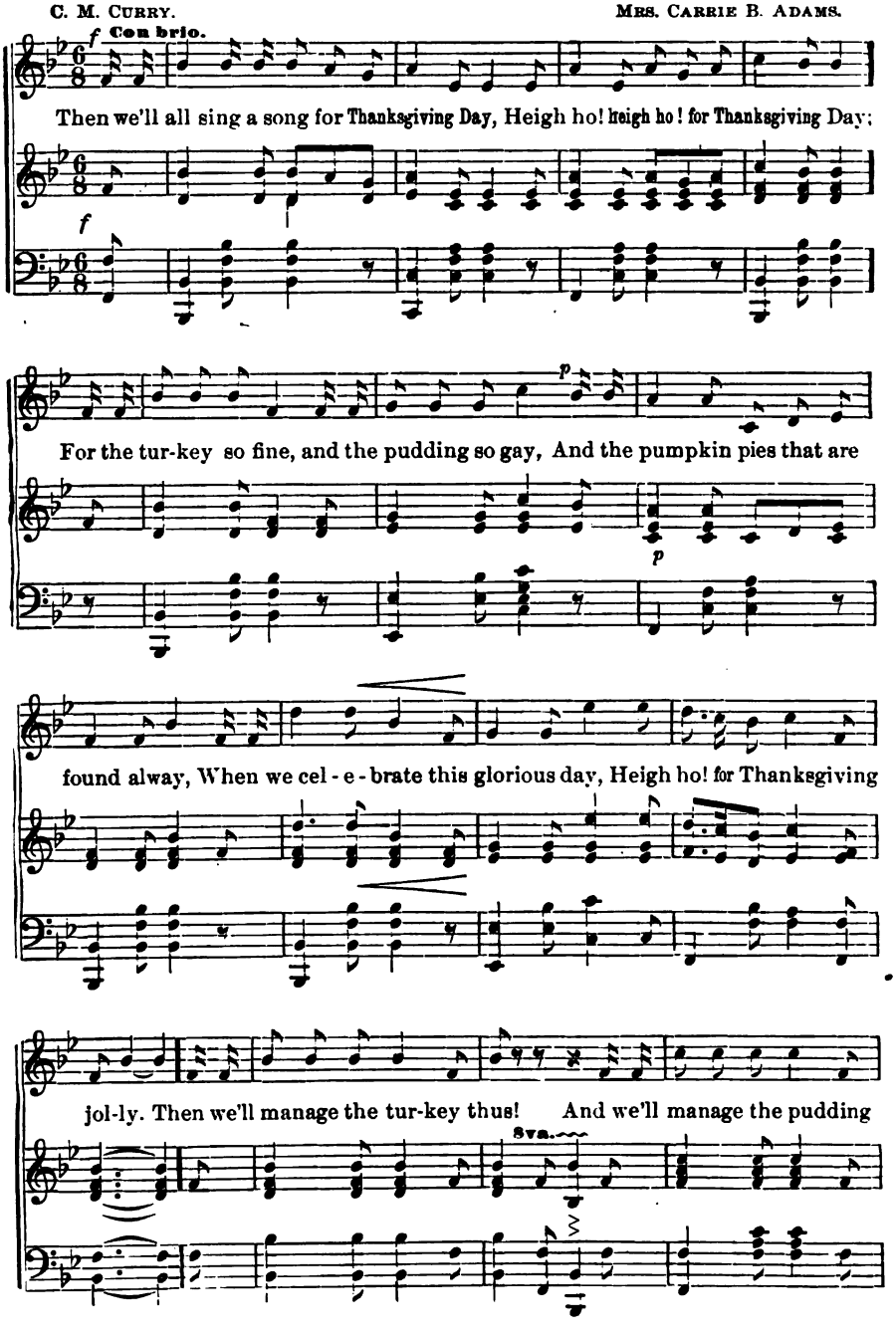
—*Charlotte W. Thurston.*

A SENTIMENT.
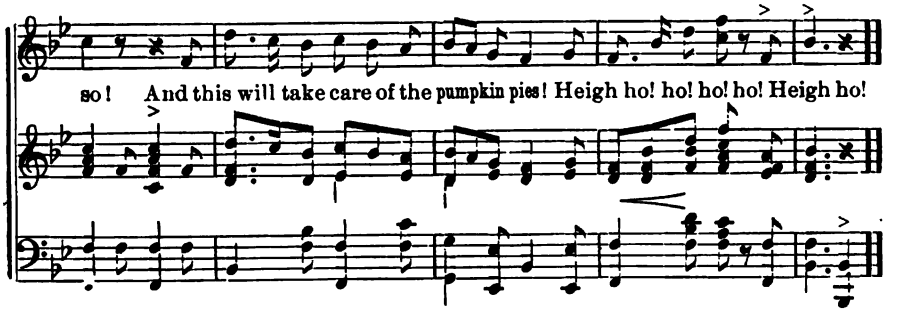
O favors, every year made new!
O gifts, with rain and sunshine sent!
The bounty overruns our due,
The fulness shames our discontent.
—*Whittier.*

HEIGH HO! FOR THANKSGIVING DAY.

C. M. CURRY. MRS. CARRIE B. ADAMS.
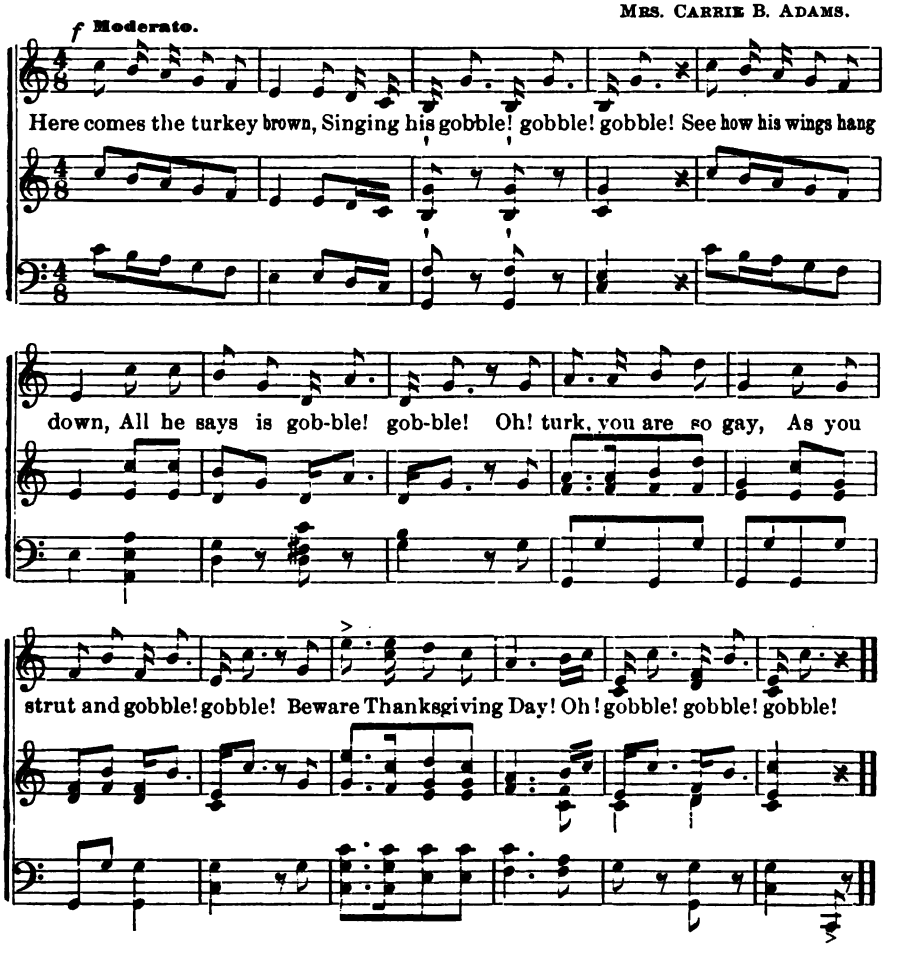


Heigh Ho! For Thanksgiving Day. Concluded.



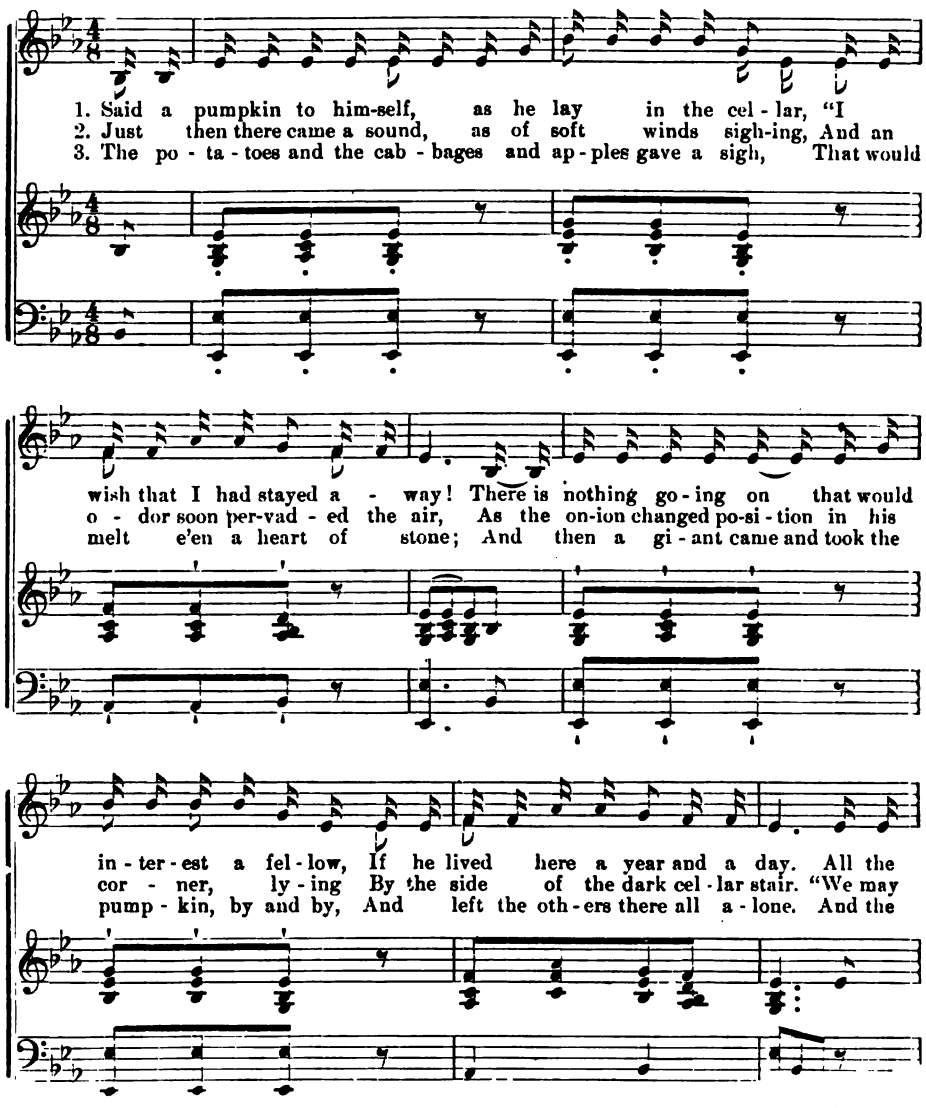
HERE COMES THE TURKEY BROWN.

MRS. CARRIE B. ADAMS.



WHAT HAPPENED.

C. B. A. MRS. CARRIE B. ADAMS.



A THANKSGIVING SONG.

MARGARET E. SANGSTER.

For sowing and reaping, for cold and for heat,
For sweets of the flowers, and gold of the wheat,
For ships in the harbors, for sails on the sea,
O! Father in heaven, our songs rise to Thee.
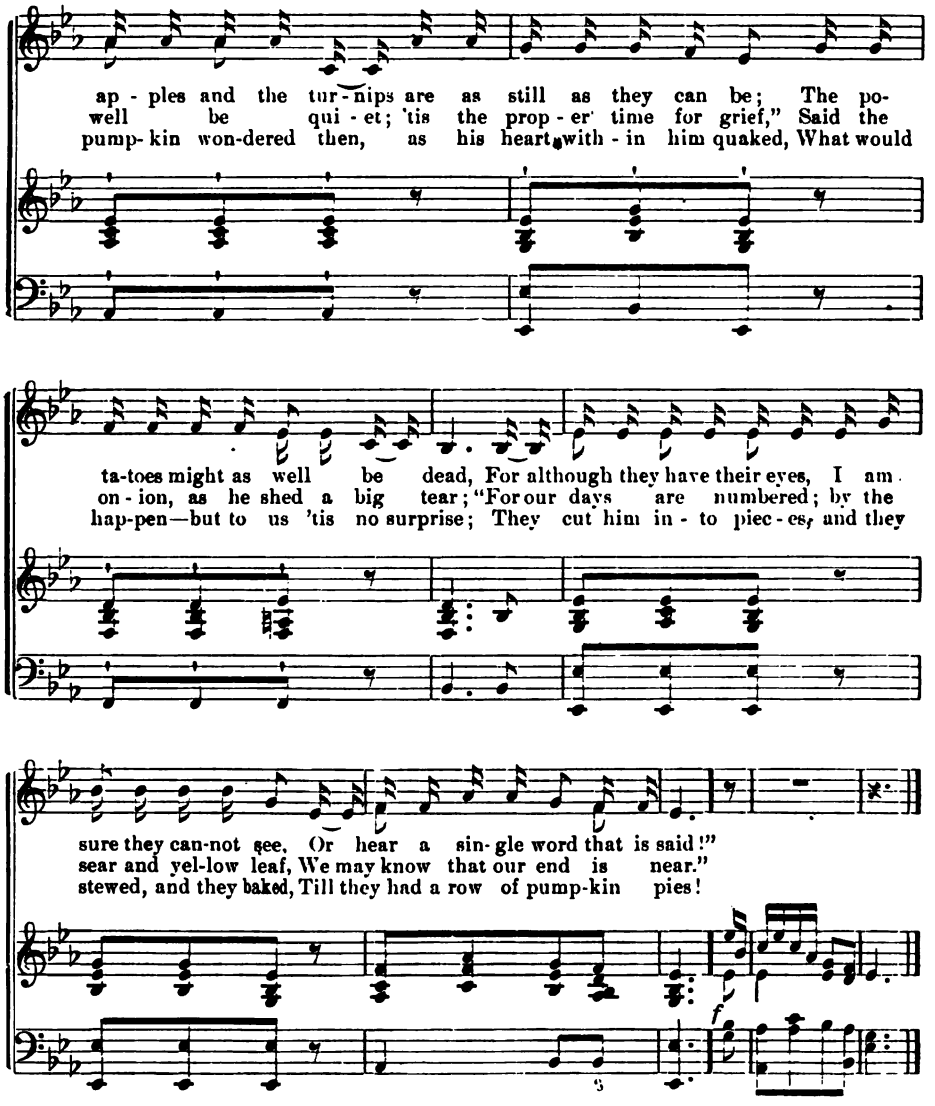
For parents who care for us day by day,
For sisters and brothers, for work and for play,
For dear little babies, so helpless and fair,
O, Father, we send Thee our praise and our prayer.

For teachers who guide us so patiently on,
For frolics with mates when our lessons are done,
For shelter and clothing, for every day's food,
We bless Thee, our Father, the giver of good.

For peace and for plenty, for freedom, for rest,
For joy in the land from the east to the west,
For the dear starry flag, with its red, white, and blue,
We thank Thee from hearts that are honest and true.

For waking and sleeping, for blessings to be,
We children would offer our praises to Thee;
For God is our Father, and bends from above
To keep the round world in the smile of His love.

WHAT HAPPENED. Concluded.



HARVEST SONG.

(Tune: "America.")

The God of harvest praise;
In loud thanksgiving raise
Hand, heart and voice.
The valleys laugh and sing,
Forests and mountains ring,
The plains their tribute bring,
The streams rejoice.

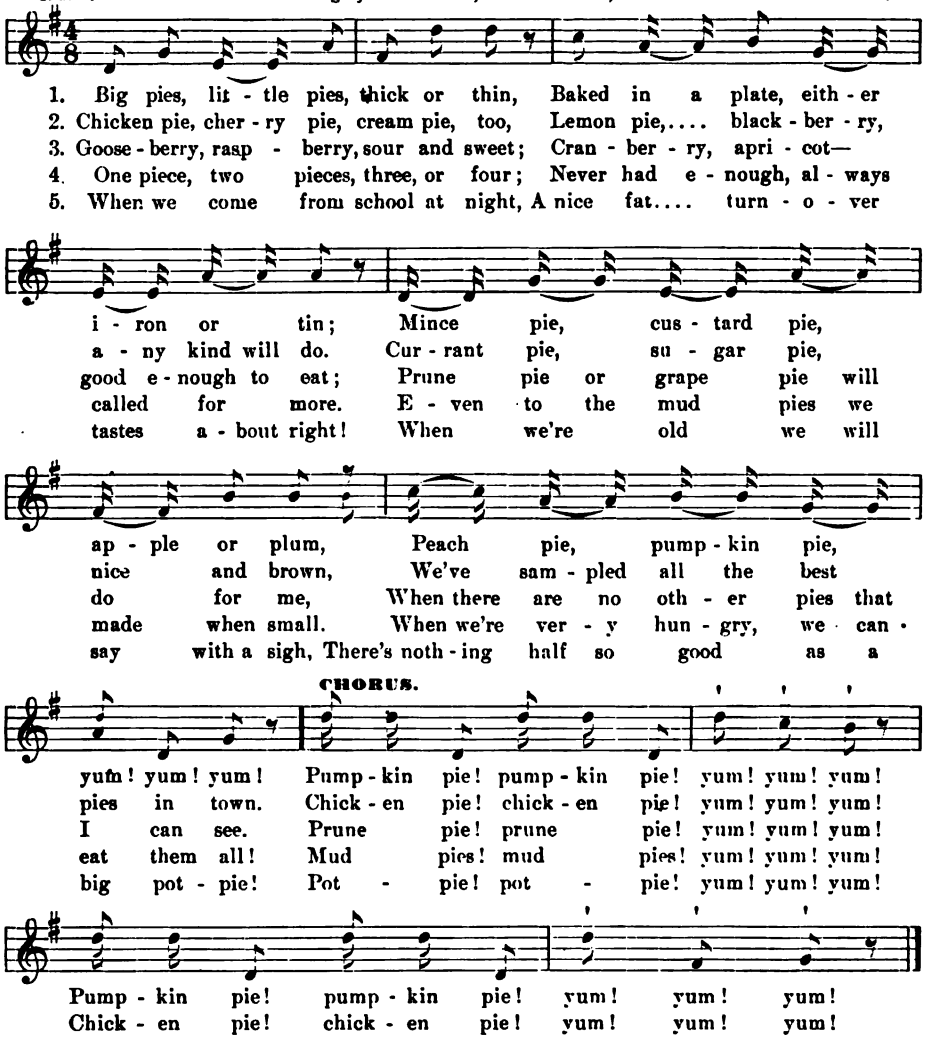
Yea, bless his holy name,
And joyous thanks proclaim
Through all the earth.
To glory in your lot
Is comely; but be not
God's benefits forgot
Amid your mirth.

The God of harvest praise,
Hands, hearts, and voices raise
With sweet accord.
From field to garner throng,
Bearing your sheaves along,
And in your harvest song
Bless ye the Lord.

—*James Montgomery.*

THE PIE SONG.*

C. B. A. As sung by the Pie Club, of Terre Haute, Ind. C. B. A.



* Six boys from six to twelve years of age will sing the Pie Song with spirit. Dispense with slurs and ties when not required by the words. If too high for the voices, sing in the key of F.

MOTION SONG FOR THANKSGIVING.

(Tune: "Tramp, tramp, tramp.")
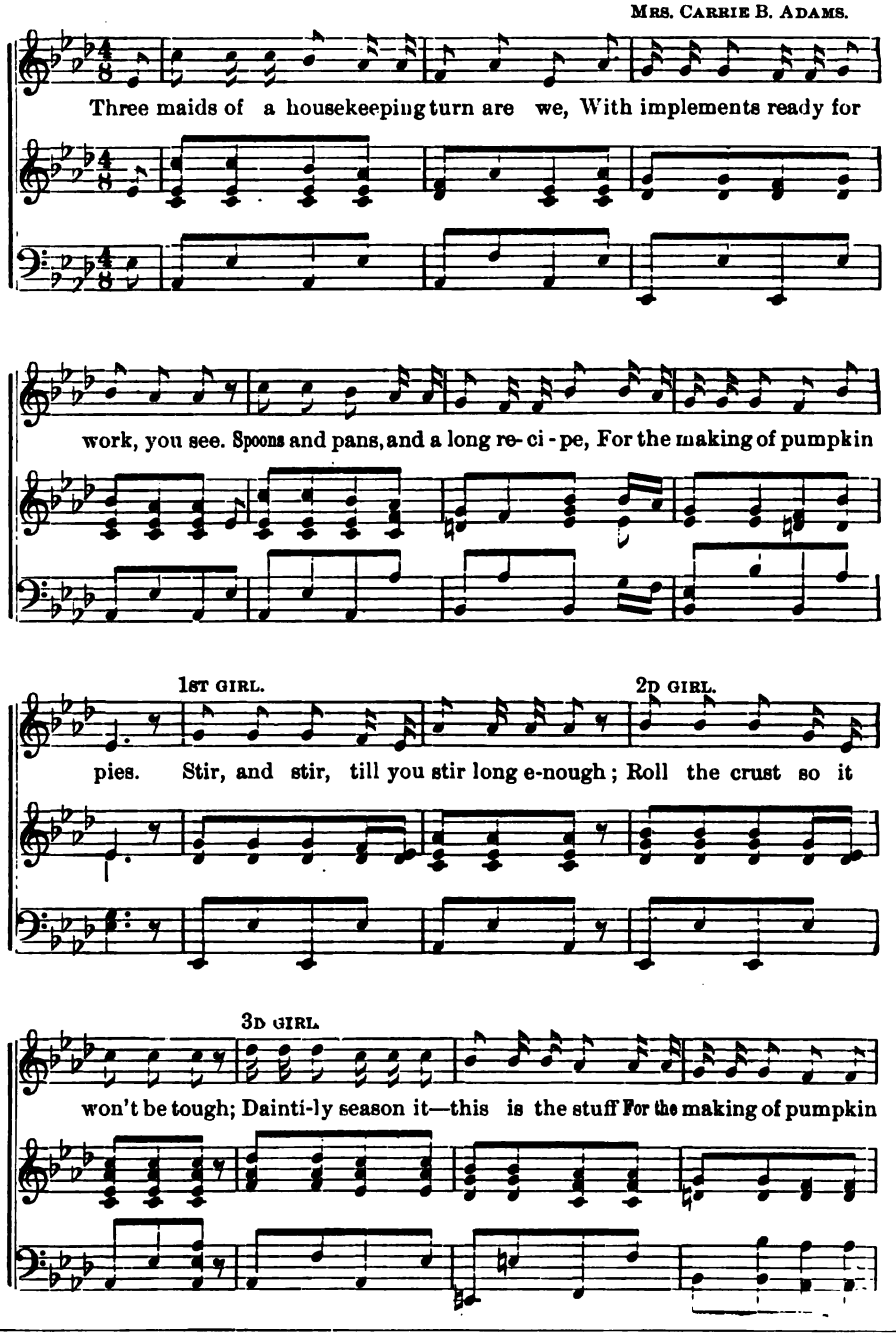
We are stepping with our feet, they are firm and strong and fleet;
Ought not that to make our hearts with joy o'erflow?
They will take us without fail up the hill or through the dale,
Into all our paths of duty they will go.

Chorus.—

Yes, yes, yes, to-day we're thankful [nodding heads].
No, we'll not ungrateful be [shaking heads];
But we'll use our limbs so strong for the work that comes along [swinging right foot],
Walking in each way of duty we can see [swinging left foot].

"THREE MAIDS OF A HOUSEKEEPING TURN."
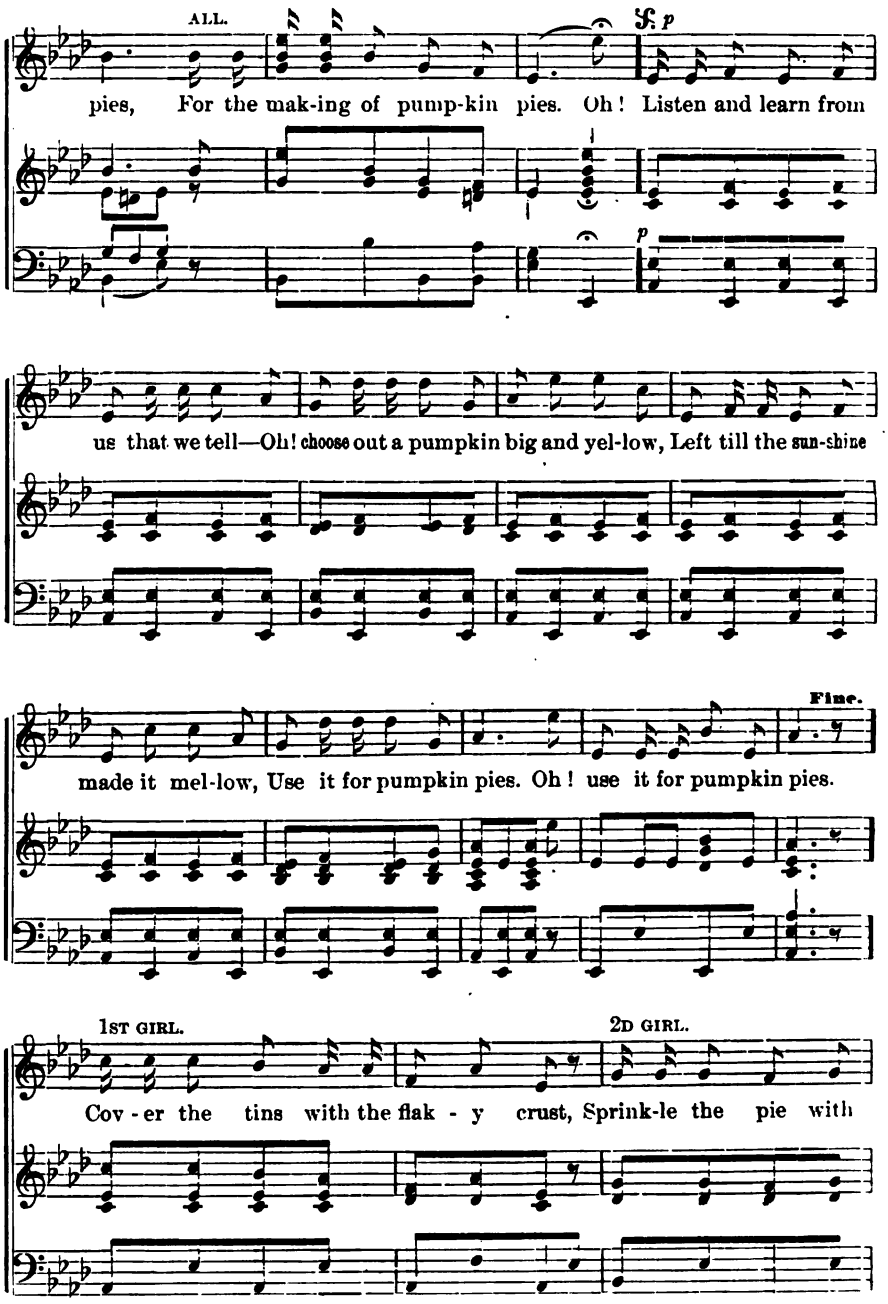
MRS. CARRIE B. ADAMS.



Now one by one the gray leaves fly
Zigzag across the yellow sky:
They rustle here and flutter there,
Until the bough hangs chill and bare.

—*Frank Dempster Sherman.*
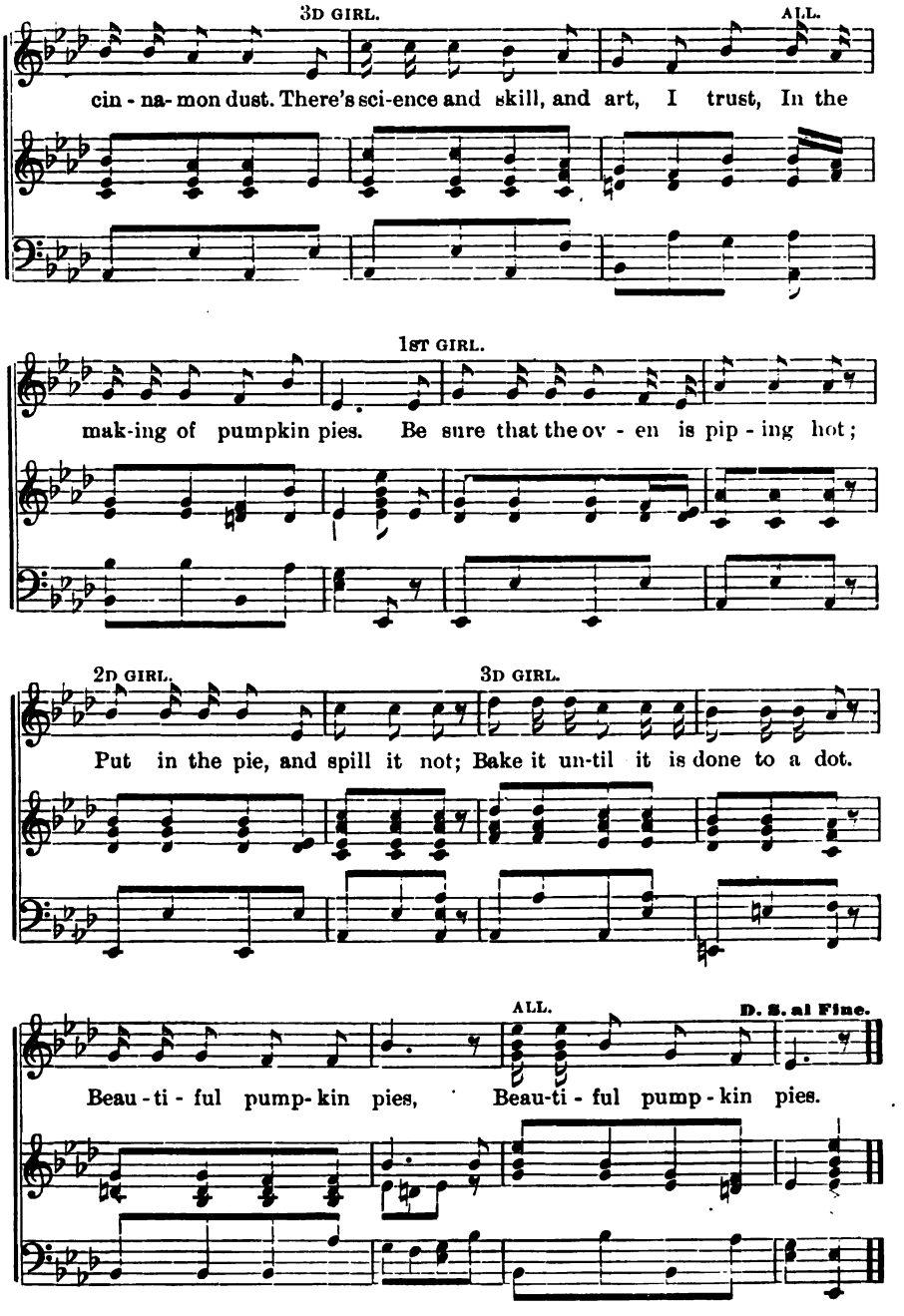
"Three Maids of a Housekeeping Turn." Continued.



Once more the liberal year laughs out
O'er richer stores than gems of gold;
Once more with harvest song and shout
Is nature's boldest triumph told.

—*Whittier.*

"Three Maids of a Housekeeping Turn." Concluded.
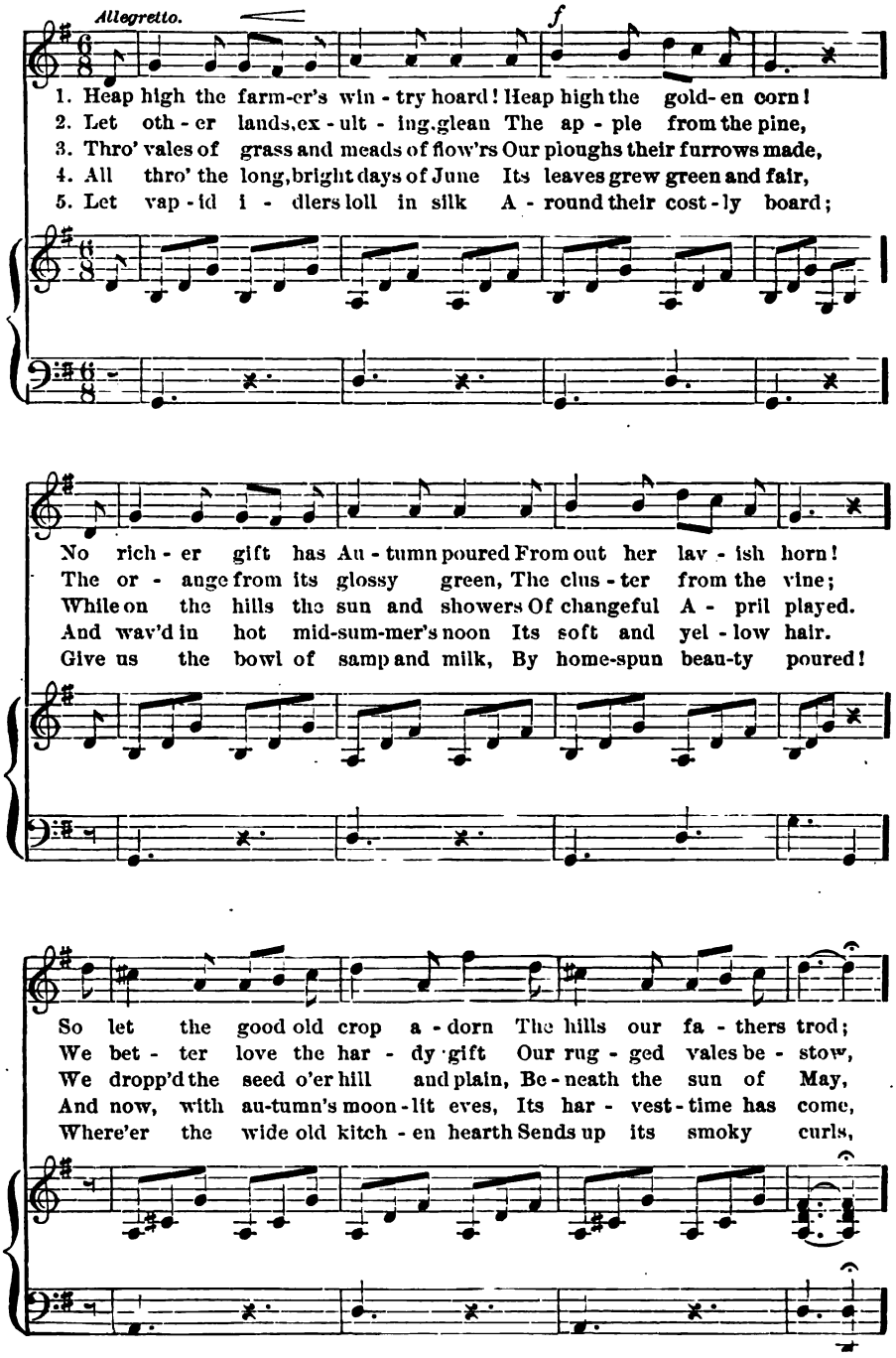


All: Listen and learn from us what we tell,—oh,
Choose out a pumpkin big and yellow,
Left till the sunshine made it mellow,
Use it for pumpkin pies.

(They trip out.)

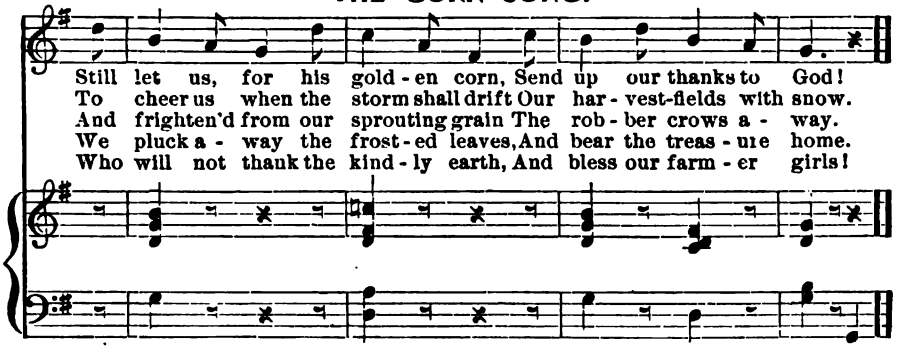
THE CORN SONG.

John Greenleaf Whittier. German Air.



From *The Riverside Song Book*, by permission of, and arrangement with, the publishers, Houghton, Mifflin & Co.

THE CORN SONG. 61



THANKSGIVING DAY.

Over the river and through the wood
To grandfather's house we go;
The horse knows the way to carry the sleigh
Through the white and drifted snow.

Over the river and through the wood;
Oh, how the wind does blow!
It stings the toes and bites the nose
As over the ground we go.

Over the river and through the wood,
To have a first-rate play.
Hear the bells ring, "Ting-a-ling-ding!"
Hurrah for Thanksgiving-Day!

Over the river and through the wood
Trot fast, my dapple gray!
Spring over the ground like a hunting-hound!
For this is Thanksgiving-Day.

Over the river and through the wood,
And straight through the barnyard gate,
We seem to go extremely slow;
It is so hard to wait!

Over the river and through the wood;
Now grandmother's cap I spy!
Hurrah for the fun! is the pudding done?
Hurrah for the pumpkin-pie!

—*Lydia Maria Child.*

THE PUMPKIN.

(*An extract.*)

Ah! on Thanksgiving day, when from East and from West,
From North and from South come the pilgrim and guest,
When the gray-haired New-Englander sees round his board
The old broken links of affection restored,
When the care-wearied man seeks his mother once more,
What moistens the lip and what brightens the eye?
What calls back the past, like the rich pumpkin pie?
O,—fruit loved of boyhood!—the old days recalling,
When wood-grapes were purpling and brown nuts were falling!
When wild, ugly faces we carved in its skin,
Glaring out through the dark with a candle within!
When we laughed round the corn-heap, with hearts all in tune,
Our chair a broad pumpkin,—our lantern the moon,
Telling tales of the fairy who travelled like steam,
In a pumpkin-shell coach, with two rats for her team!
Then thanks for thy present!—none sweeter or better
E'er smoked from an oven or circled a platter!
Fairer hands never wrought at a pastry more fine,
Brighter eyes never watched o'er its baking, than thine!
And the prayer, which my mouth is too full to express,
Swells my heart that thy shadow may never be less,
That the days of thy lot may be lengthened below,
And the fame of thy worth like a pumpkin-vine grow,
And thy life be as sweet, and its last sunset sky
Golden tinted and fair as thy own pumpkin pie!

—*Whittier.*

THE FIRST THANKSGIVING DAY.

"And now," said the Governor, gazing
 Abroad on the piled-up store
Of the sheaves that dotted the clearings,
 And covered the meadows o'er,
"'Tis meet that we render praises,
 Because of this yield of grain;
'Tis meet that the Lord of the harvest
 Be thanked for His sun and rain.

"And therefore I, William Bradford
 (By the grace of God to-day,
And the franchise of this good people),
 Governor of Plymouth, say,
Through virtue of vested power,
 Ye shall gather with one accord,
And hold in the month of November,
 Thanksgiving unto the Lord.

"He hath granted us peace and plenty,
 And the quiet we've sought so long;
He hath thwarted the wily savage,
 And kept him from wrack and wrong.
And unto our feast the sachem
 Shall be bidden, that he may know
We worship his own Great Spirit,
 Who maketh the harvest grow.

"So shoulder your matchlocks, masters,
 There is hunting of all degrees;
And fishermen, take your tackle
 And scour for spoil the seas;
And maidens and dames of Plymouth,
 Your delicate crafts employ,
To honor our first Thanksgiving
 And make it a feast of joy.

"We fail of the fruits and dainties,
 We fail of the old home cheer—
Ah, these are the lightest losses,
 Mayhap, that befall us here.
But see, in our open clearings
 How golden the melons lie;
Enrich them with sweets and spices,
 And give us the pumpkin pie."

So, bravely the preparations
 Went on for the autumn feast,
The deer and the bear were slaughtered;
 Wild game, from the greatest to least,
Was heaped in the colony cabins;
 Brown home-brew served for wine,
And the plum and the grape of the forest
 For orange and peach and pine.

At length came the day appointed;
 The snow had begun to fall,
But the clang from the meeting-house belfry
 Rang merrily over all,
And summoned the folk of Plymouth,
 Who hastened with glad accord
To listen to Elder Brewster,
 As he fervently thanked the Lord.

In his seat sate Governor Bradford;
 Men, matrons and maidens fair;
Miles Standish and all his soldiers,
 With corselet and sword were there;
And sobbing and tears and gladness
 Had each in its turn the sway,
For the grave of the sweet Rose Standish
 O'ershadowed Thanksgiving Day.

And when Massasoit, the sachem,
 Sate down with his hundred braves,
And ate of the varied riches
 Of gardens and woods and waves,
And looked on the granaried harvest,
 With a blow on his brawny chest
He muttered, "The good Great Spirit
 Loves His white children best!"

—Margaret J. Preston

THE LITTLE PILGRIM MAID.

(Recitation with motions.)

There was a little Pilgrim maid
 Who used to sit up so; [1]
I wonder if she ever laughed
 Two hundred years ago.

She wore such funny little mitts, [2]
 And dainty cap of silk. [3]
She had a little porringer
 For her brown bread and milk.

She was so good, so very good;
 Ah, me, I most despair. [4]
She never tore her Sabbath dress [5]
 A-sliding down the stair.

But then, I really try, and try
 To do the best I can; [6]
P'r'aps *I* [7] can be *almost* as good
 As little Puritan.

And if, when next Thanksgiving comes
 I try to sit up so, [8]
Maybe I'll seem from Pilgrim land
 Two hundred years ago.

—Isabell C. Woodland in Primary Education.

MOTIONS.

1. Hands folded in a prim manner; body erect.
2. Hands held up to show mitts.
3. Point to cap.
4. Gesture of despair.
5. Dress held out at sides.
6. Hands folded.
7. Point to self.
8. Prim position, same as (1).

EDUCATIONAL, LITERARY AND GENERAL ITEMS.

Miss Jennie Taggart is teaching in the Elwood, (Ind.) schools, sixth grade.

Dr. David Starr Jordan of Stanford University will deliver a course of lectures at Indiana University next spring.

Miss Carrie Seibel of the class of '99 I. S. N. has a position as teacher in the fifth grade of the Huntington schools.

The ninth educational district of Kentucky held an interesting and profitable meeting at Catlettsburg, October 7.

Perry B. Burnett, Indiana University, 1884, recently secured the highest grade in a competitive examination for a teacher of Spanish in the Chicago school.

The fall term of Indiana University shows the largest attendance in its history. The indications are that the attendance for this year will exceed the enrollment of last year, 1,050.

Thomas large, a graduate of Indiana University, class '97, and until recently teacher of science at Evansville, has been elected to a positon in the department of biology in the University of Illinois.

Favorable reports reach us of the work this year in the Shelbyville schools. J. H. Tomlin has the superintendency, as heretofore, and D. O. Coate remains as principal of the high school, at an increased salary.

The teachers of Porter county, Ind., have formed an association for the purpose of studying the laws of life and growth in the learning process—a most worthy object. The first annual meeting was held at Valparaiso October 28.

The second term of the Tri-State normal school opened with a fine attendance, October 24. There were twenty-six pupils who started in Greek. Dr. Nason from the university of Pennsylvania has commenced his work as head of the pedagogical department.

The opening number of the *Manual Training Magazine* was published in October. It is well made and attractive, mechanically, while the list of contributors and patrons gives promise of a periodical that will prove helpful in a large way to this department of education.

Mr. Edgar Mendenhall, principal of the Greensburg high school, was married early in October to Miss Marcia Miller of Franklin. It will be remembered that Miss Miller was for some time teacher of music in the Edinburg high school. THE EDUCATOR extends congratulations.

The annual meeting of the southeastern Ohio Teachers' Association was held in Pomeroy, October 27 and 28. The border states of Kentucky and West Virginia were represented on the program by Superintendent J. G. Crabbe of Ashland and Honorable Virgil A. Lewis of Mason.

Chas. D. Royce, superintendent of schools for Ripley county, Ind., has issued a booklet showing the high school work done in non-commissioned schools of the county last year. It is interesting to note that sixty-six pupils pursued such work last year and that the demand for it is increasing.

The report submitted by Superintendent Walter Dunn to the school board of Knox, Indiana, indicates that the schools of that town are in a flourishing condition. This is quite likely to be the case when the teachers are willing, as here, to spend one evening each week at a meeting for professional study.

The members of the executive committee of the State Teachers' Association have decided, by a unanimous vote, to admit no one to the sessions of the association except by card furnished by the permanent secretary upon payment of membership dues. This is necessary to meet the expense of the association.

Sir Henry Irving devoted part of his summer holidays writing an article which he has given to *The Ladies' Home Journal*. It is called "Shakespeare in Small Communities," and tells how the study, reading aloud and acting of Shakespeare's works may be followed in communities away from the larger centers.

The teachers of Howard county held an association in Kokomo October 21. Among other features there was a symposium on "What principles should guide the teacher in determining how much time should be devoted to school work?" Professor R. J. Aley delivered an address. The attendance was good and the interest excellent.

The manual of the Mitchell (Ind.) public schools presents a thorough and well organized course of study. Superintendent E. L. Hendricks, and his principals F. J. Wolfe and Frank Wood are certainly planning to do good work. The general principles set forth regarding teacher and parent, discipline, &c. are direct and timely.

The annual announcement of Superintendent Louis H. Hamilton of the Jasper county public schools is both clear and comprehensive. It is designed to supplement the course of study and to furnish with that document, general direction to teachers, directors and trustees. Mr. Hamil-

ton is one of the progressive and wide awake superintendents of the state.

A most remarkable series of art re-productions has just been published, which should attract every one interested in the study of art or its study in the schools; namely, the Elson Prints of Masterpieces in Art. Every one of our readers is recommended to send ten cents in stamps to A. W. Elson & Co., Boston, and obtain a sample, with a list of the subjects.

The Earlhamite contains the announcement that at the last yearly meeting a gift of $25,000 was made by Francis T. White as an addition to the endowment fund for Earlham college. In addition to this some $40,000 has just been subscribed which will almost or quite free the college from debt. This will be good news to the many friends of the institution.

The veteran publisher, William Henry Appleton, died October 20 at the age of 85 years. His father, Daniel Appleton, was the founder of the great publishing house, but retired in 1868, after which W. H. Appleton was for many years the head of the firm. The cause of copyright in America owes much to his untiring efforts. His son, W. W. Appleton, is now president of the company.

The annual meeting of the Kentucky Educational Association will be held at Louisville, December 27-29. There will be a special effort to make the meeting this year the best in the history of the association. Superintendent J. G. Crabbe of Ashland is president this year, and J. M. Downs of Bellevue is secretary. There will be an excellent program, and a large attendance is assured.

In the annual report of the Ashland (Ky.) public schools we find, besides the usual statistics and an excellent course of study some fifteen pages devoted to direct statements by the superintendent, J. G. Crabbe, regarding the function, relations and scope of a school system, as he understands it. Such plain talks must result in closer relations between teachers and patrons, and hence in greater effectiveness.

Judging from the manual of the Rockville, (Ind.) public schools they are enjoying their usual prosperity. The high school course seems especially comprehensive and well arranged, while the work in the grades appears to articulate well with it. It is interesting to notice in the manual a classified list of the 1227 books in the school library. Superintendent Thornton evidently has his work well organized.

A most interesting experiment that is just now being tried in Chicago is a school for pupils who are too slow or too dull to attend the regular school. The number is to be kept small—not above fifteen at any one time. It would be surprising if these dull ones, under the careful attention that teachers will be able to give them, should show remarkable progress. President Harper is interested, and careful records will be kept.

Several months ago we had the pleasure of reading a monograph by Professor N. C. Hieronimus of Richmond, Ind., on "The Missouri Compromise." He now presents in similar form a study of "The Stamp Act." The writer believes in the intensive study of particular events and periods, and his purpose in these studies, others of which are to follow, is to bring them within the comprehension of the eighth grade pupils. The price is ten cents.

Superintendents Charles A. Robertson of the Crawford county schools, and George R. Wilson of the Dubois county schools have included in their handbooks for teachers the various official pamphlets; such as, the Indiana state course of study, the township institute outline, and announcements relating to the reading circles. Both books have also much other official direction and personal advice. They indicate careful organization and intelligent supervision.

The Chicago board of education has made special provision for a department of scientific pedagogy and child study. This is in accordance with suggestions made to have all questions regarding child psychology referred to a consulting psychologist. The plan will be welcomed as relieving over-burdened teachers whose special study of children was vague and random at best, and at the same time as referring important pedagogical matters to a competent authority.

The manual of the public schools of Alexandria, Ind., has in its preface this sentence—"This course of study is given to the teachers of Alexandria in the hope that its suggestions may bring into the work of our schools helpful unity of thought and action, without in any way restricting the individuality of teacher or pupil." Such a theory, consistently followed, is quite likely to develop such excellence as the Alexandria schools under Superintendent I. V. Busby appear to have reached.

The Indianapolis Business University enters upon its 50th year, and the fifteenth under the present management, with the largest enrollment it has ever had. Students come from all sections, and include sons and daughters of prominent educators, business men, farmers,

bankers, clergymen, and those of other pursuits. Much additional room and increased equipment have been provided. The new accessions to the faculty give this institution grounds for claiming the largest corps of experienced professional instructors in any business school in the west.

A change has been inaugurated at Indiana University which will be of interest to the teachers of the state. Hereafter there will be four regular terms during the year. The fall, winter and spring terms will be twelve weeks each, and the summer term six weeks. The work during the comming summer, in nearly all cases, will be in charge of the heads of the departments. Heretofore the Summer School has been a private affair, but hereafter will be conducted as a regular part of the University work. The Summer School began its existence in 1890, and since that time has had a steady growth.

Messrs. Small, Maynard & Company of Boston, the publishers of *Mr. Dooley: In Peace and in War* and of Mr. Dunne's forthcoming volume, *Mr. Dooley: In the Hearts of His Countrymen*, have secured a decree in the United States Circuit Court for the northern district of Illinois against the publishers of the unauthorized volume of Dooley papers, *What Dooley Says*, recently issued in Chicago. The injunction which accompanied the decree prohibits any further sale of *What Dooley Says*. The decree itself, however, is of general interest on account of its recognition, on unusually broad grounds, of the right of an author to control the work of his pen.

One of the very good handbooks prepared by county superintendents for their teachers is the one issued for the Henry county schools by W. F. Byrket. It is prefaced with the following sentiment:—"An education is the safest investment, pays the highest interest, is most readily exchanged, never depreciates in value, never suffers from over-taxation, is never in danger from thieves, never ends in a lawsuit to break the will after the owner's death, and is probably a gain for all eternity." There are suggestions on opening exercises, general order, school surroundings and moral instruction, besides the usual information about the various township, county and state organizations, with lists of teachers, graduates, &c.

QUATRAIN.

Over my head and far away
I saw the frightened moon,
A forgotten guest of Yesterday
In the warm blue halls of Noon.

—*Arthur Ketchum in the November Atlantic.*

A NEW EDUCATIONAL IDEA.

A new and most comprehensive educational scheme has just been inaugurated by a New York publishing house. Their idea is to meet the needs of the thousands of people who want to "get along in the world,"—and need either general or special knowledge to do so—by a "Home Study Circle," whose twenty or thirty volumes will cover not only the usual school and most of the college courses, but also such special *practical* subjects as Commerce and Finance, Trade and Business, Art and Architecture, Illustrating and Designing, Household Science, Stenography and Correspondence, Natural Science, Modern Governments, Night School for Working Boys, and so on.

The books are entirely self-explanatory and are graded so as to meet the needs of young and old, primary and advanced students. Professor Seymour Eaton of the Drexel Institute has edited them, using as a foundation the very successful course issued by the *Chicago Record*, whose thousands of enrolled students made the idea seem a close approximation to the Psalmist's "Wisdom crying aloud in the streets."

The best-known authors, college professors and specialists of various sorts have given their aid to make the enterprise a success; and the list of contributors comprises such names as: Dr. Edward Everett Hale, Hamilton W. Mabie, Professor Edward Dowden, Dr. W. J. Rolfe, Thomas Wentworth Higginson, Brander Matthews of Columbia College, Dr. Hiram Corson, John C. Van Dyke, President Gates of Harvard, Albert Shaw, Maurice Francis Egan, Edwin A. Grosvenor, Professor N. S. Shaler, Professor A. L. Frothingham, Jr., and many others. The first volumes, "Popular Studies in Literature" and First Course in Mathematics," are announced for immediate publication by the Doubleday & McClure Company, who offer to send complete details of the scheme.

TWO LARGE SCHOOLS.

The Southern Normal School and the Bowling Green Business College of Bowling Green, Kentucky, are meeting with phenomenal success. The Normal and Business College are two separate schools conducted under the same management, but under separate charters. The schools have widened their influence and extended their patronage until most every state in the union is represented. The enrollment during the past year went beyond the most sanguine expectations of the management of the schools. The

people of Bowling Green have taken special interest in the schools, which have become the pride of the city. The citizens are backing the institutions with money and influence, and have just recently raised a large amount of money to be used in the erection of magnificent new college buildings with modern equipments, and new brick boarding homes. They offer these buildings without rent and indebtedness to the management of the schools. All parties who contemplate entering a Normal or Business College should write H. H. Cherry, General Manager, for information before entering elsewhere.

ARITHMETIC IN THE TRI STATE NORMAL OF ANGOLA, IND.

The Tri State Normal has always given especial attention to arithmetic. We are the authors of the analytical methods, copyrighted in 1879. We always have three or four different classes—one of which is a special teachers' class, studying the principles of the subject. For the balance of the year, we shall have a class giving especial attention to the solution of the most difficult problems in the new Indiana Arithmetic by Cook & Cropsey. A term's work in arithmetic in this school will more than pay all expenses.

L. M. SNIFF, Pres. Angola, Ind.

New and interesting material for Christmas School Exercises is hard to get, and is eagerly sought for by teachers. Hence our readers will scan with interest the page elsewhere in this issue in which E. L. Kellogg & Co. of New York announce some very attractive new publications in this line.

THANKSGIVING WONDER BALL.

A Thanksgiving wonder ball is wound of yellow wool to simulate a pumpkin. Trifling gifts, as tiny dolls, little whistles, lace pins, etc., are wound in it. As it is unwound the gifts fall out. The wool should be rolled up again as it is pulled off.—*November Ladies' Home Journal.*

There has grown up recently a large demand by teachers for pictures to use in their work—especially in Nature Study work. The colored pictures of plants, flowers, etc., issued by E. L. Kellogg & Co. of New York, described on another page of this issue, should interest many of our readers.

THE INLAND EDUCATOR.

A JOURNAL FOR THE PROGRESSIVE TEACHER.

WALTER W. STORMS, Editor.

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A JOURNAL FOR THE PROGRESSIVE TEACHER

Edited by Walter W. Storms

Associate Editors: { Francis M. Stalker. / Chas. M. Curry.

DECEMBER, 1899.

◆◆◆

With mistletoe just overhead,
And at the window holly,
And in the heart good Christmas cheer.
Pray, who would not be jolly!

◆◆◆

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New Books. Our readers are cordially requested to look over the announcements made each month under the heading "Among the New Books." The large publishing houses have been especially generous in sending us copies for review, and it is our purpose to give teachers a reliable directory of the latest publications, saying of each book as much as will enable the reader of these notices to decide whether or not it is such a book as he wishes to buy. The titles presented this month are especially varied and attractive.

* * *

A "Log-Book" for Schools. A late copy of the *Western School Journal* contained a suggestion that impressed us as worth passing along. It was to the effect that a permanent journal be kept in each school to record important events in the life of the school. It might include, besides lists of students and teachers, any achievements of note by any of them after leaving the school; special occasions such as concerts, picnics and commencements, rebuilding of schoolhouses, adoption of books, etc. Such a record would properly be kept in the library. The office of recorder could be made a position of honor. The idea would encourage commendable pride in the school, and in time the history would become both interesting and valuable.

* * *

Opening Siberia. The building of the railroad across Siberia, a mighty project which Russia is pushing with all energy, will accomplish two distinct things; namely, the development of the untold agricultural and mineral resources of that vast district, and the letting in of light which will gradually terminate the Siberian exile system. Both results are beneficent and much to be desired. There are other results, such as the extension of Russian influence in China, which are more or less clearly foreshadowed. The great developing processes that are going on rapidly in both Asia and Africa are sure to mark eras in the history of the world.

* * *

Uncle Sam and the Philippines. *The Outlook* of November 4, prints "an authorized interview" with President Schurman of Cornell university, who has lately completed his work as a member of the Philippine Commission. The interview is in the form of definite answers to a series of questions. In view of the fact that public opinion is so sharply divided upon the policy of our government, and that this opinion has been necessarily formed in large part by partisan newspapers, Dr. Schurman's candid statements will be highly appreciated. Let all who have access to *The Outlook* read the interview in full. For those who can not do so we present this summary:—When he was appointed to the Commission he was openly and definitely opposed to the taking of the islands by the United States. He thought they should have been left with Spain. In Manila and other considerable towns of the archipelago he found a highly educated class, some of the professional men having spent years in the German and French universities. But this class is very small in comparison with the whole population. The masses are "densely ignorant," superstitious, credulous, gullible. Their standard of judgment for white people is a white Spaniard, and they naturally expect the same treatment from us as from Spain. The Filipinos who are in actual rebellion are the Tagalogs numbering a million and a half. The rest of the inhabitants of the archipelago, numbering some six and a half millions, are at peace with us. The present military situation is considered grave. The Filipino army, rather than certain strategic points and towns, should be the objective point of attack. "The supreme test of victory would be the annihilation of Aguinaldo's army as a fighting machine. . . . Without force I think it impossible to settle our Philippine problem." But "we must take account of their political ideals, and, so far as pos-

sible, satisfy them. . . . My policy is, a grant of rights, authorized by Congress, in one hand, and unlimited thunder and lightning in the other." To the nations of the world who expect us to maintain peace, to the six and a half millions of Filipinos who are inclined to be friendly, and to our own national honor we must face the responsibility. "Strongly as I was opposed to the taking of the Philippine Islands from Spain, I clearly see that we can not abandon them now." Our immediate and inevitable task is to educate the Filipinos in self-government.

* * *

As We Were Saying. In one of his "Conversations" recently Mr. Winship tells the following: "In Binghamton, N. Y., I found Miss Mason in the sub-primary class, with little people, not one of whom had been in school more than six weeks, having excellent reading from first readers. It was a great test of faith when told that these people knew nothing of letters or words the fourth of September, and were reading with ease on the thirteenth of October. They knew more letters, sounds, and words than I have found a class knowing in the same time, and they read with expression. When I asked by what system she taught, I was told that it was her own. But it was plain enough that she knew all about the Pollard and the Ward, and I suspect the Fundenberg methods, but then she used them all with so much of her own personality that there was more of herself than of any one of them in her work" There may be others who will find their faith tested in an attempt to comprehend such progress, and indeed there need be no discouragement if our own efforts meet with less pronounced success; but the lesson to be learned is obvious. Miss Mason has tried to imitate neither the Pollard nor the Ward nor the Fundenberg systems. She has sought and appropriated what is good in each and has wisely *adapted* it to the conditions of her own school, and, as Mr. Winship says, to her own personality. Books and journals of method and device are put before the teacher at every turn, and it is well that the teacher read largely, being careful all the while to discriminate between the wheat and the chaff. But we must keep in mind that when the pure wheat is found, assimilation is necessary before it can really help us as food.

* * *

Worthy Commendation. The *Journal of Education* for October has this to say regarding Larned's "History of Ready Reference," and we pass it along so that our readers too may know of what Dr. Winship evidently regards a good thing: "It is easy to be impressed with a book or a set of books as they come fresh from the press; it is easy also to use a book as a fad for a little time; but it is not often that any works, used daily, grow to be more and more appreciated. This has been my experience with Larned's 'History of Ready Reference,' which, aside from the great dictionaries, is by far the most valuable set of books in my library of several thousand working volumes. If I am studying history, economics, geography, biography, or education, Venezuela or the Transvaal; if I am writing an editorial or a book,—I find in 'History for Ready Reference' the most reliable information anywhere obtainable, and it is carefully winnowed, clearly stated and always interesting. This editorial tribute is prompted because of the great benefit these five volumes have been to me of late, and my admiration for the work is almost magnified into reverence for the author who has produced such a comprehensive and concise, reliable and enjoyable treatment of the affairs of all countries and all times." This opinion we wish to endorse. There is not a set of reference books extant today that is receiving more cordial commendation from educated people everywhere. It is not our policy to use the editorial pages for advertising purposes, but when we find an article of exceptional merit, a knowledge of which is likely to be of real service to our readers, it is our pleasure to help extend that knowledge.

* * *

Kipling's Recessional. The discovery has been made that Kipling's famous poem turns out to be "theistic," and that it is therefore an improper piece of literature for school children to read. At least this is the verdict in Chicago. It may be that in less enlightened communities the poem may be tolerated for a few years longer. Indeed, the surprising thing is that it took Chicago so long to discover this element and its poisonous subtlety. To speak seriously, the whole thing would be humorous did we not understand that Superintendent Andrews and such a churchman as Jenkin Lloyd Jones had joined in the absurdity. We thought the climax had been reached a few years ago when somebody discovered that Longfellow's "The Building of the Ship" was a highly improper poem. What shall we expect next? Religious books should be put in the dark corners of the libraries, our whole literature will have to be expurgated, and perhaps the churches will need to be concealed behind high fences lest it come to pass that the dear little atheistic children ask the meaning of

all these things. Nonsense! We have heard that in olden times there were men who would swallow a camel with ease, but strained terribly at a gnat. Can it be that there are some of them left over in Chicago? Until we have proof positive we shall believe that Dr. Andrews has been misquoted or misunderstood.

* * *

Character Better Than Knowledge. The following sentences spoken by Dr. Benjamin Ide Wheeler in an informal talk to the students of the University of California are just as applicable to pupils in grammar and secondary schools, and therefor seem worth repeating:—"It is what goes over into spinal marrow, into real life, that makes us; and what we are going to get out of our university life is not bits of knowledge, not maxims and rules for getting this or that, for learning this or that, for attaining this or that; but, after all, it is this one thing which we talk so much about and understand so imperfectly—it is character. . . . As I grow older I come less and less to respect men of brilliancy, and to tie to men for their character. . . . In a university, or elsewhere in the world, heart is more than head and love is more than reason."

* * *

Assigning Lessons. No very careful or prolonged observation is needed by parents at home to show them that there is a great deal of aimless study because children have not fully understood lesson assignments. This may be in a sense the fault of the child. Pupils are sometimes inattentive, and, if the assignment be made at the close of the recitation, they are fatigued. Sometimes teachers are over-ambitious for the progress of their classes, and infringe upon the time for assignment so that it is made hurriedly just at the minute of dismission. This is such evident bad economy that it is hard to believe any teacher guilty of it. Yet it is done habitually, even by some of us who know better. If the lesson assigned is so many pages of the text-book in use there may be no need of special care, though even here it seems desirable that the teacher point out what is most essential. It is discouraging, even to advanced students, to work hard in mastering some point, and then be told by the teacher that it is unimportant. But with the extension of library facilities subjects are often studied topically. This is fortunate, but it is here that the inconsiderate teacher is in great danger of over-loading his pupils. Before requiring a general use of reference books be sure that some instruction be given showing how to use them intelligently. It is important, too, that students be told what to look for in reference books. To fail in this is like taking a city-bred child into the heart of a wood, as Dr. Roark says, and requiring him to find his way out alone. First, then, presuming always that the teacher knows clearly the work to be done in the next lesson, be sure to take ample time to make the assignment; next, make it clear what the students must look for in their general references so that they need not use time needlessly in vague search; make sure that the assignment is understood by all; and, finally, if the school is one in which a pupil will recite to various teachers be careful not to assign general or library work for *your* class that is likely to take *all* of the pupil's leisure.

* * *

Brief Items of Current History. One of the great engineering feats of the century is the opening of a waterway that will connect Chicago with the Illinois river and the Mississippi, and will give Lake Michigan an outlet to the Gulf of Mexico. It should be remembered that the location of Chicago on the lake shore made it impossible to dispose of the drainage from the city except by running it into the lake; but since the city's supply of water comes also from the lake, the danger of this system of sewerage is evident. The new waterway will serve as an outlet for the sewage and at the same time will open a new artery for trade. It will be a good plan to have pupils study out what commercial and transportation interests will be offered and how. The canal will be twenty-two feet deep, about 175 feet wide, and thirty-five miles long. According to present plans it will be opened in December.

* * *

A modus vivendi, or temporary arrangement, has been agreed upon between our government and Canada in relation to the Alaskan boundary. It appears that in our purchase of Alaska from Russia in 1867 the boundary along the eastern side of the "panhandle" was not sharply defined, and being sparsely settled, little attention has been paid to it until the opening of the gold fields recently. At one time the question threatened to mar good feeling on both sides, hence an agreement, even if temporary, is cause for congratulation.

* * *

The war in South Africa has moved rapidly during the past month. Immediately after President Kruger had issued his ultimatum that England cease her military preparations bodies of Boer soldiers led by General Joubert were led

into the English province of Natal. Several engagements have resulted in a general advantage to the Boers, though both sides have lost heavily considering the small numbers of troops engaged. This preliminary fighting was with the English forces stationed in South Africa, and, of course, before the arrival of the large army equipped in England and sent south under General Redvers Buller.

* * *

An Excellent Report. It was the general verdict of the superintendents of the Indiana town and city schools, in session at Indianapolis, Nov. 9–11, that the committee appointed to consider a course of study for the high schools of the state had done most excellent work. This committee, consisting of Superintendents Millis, Carnagey, McDaniels, Sanders and Wood, was appointed one year ago, and its report, comprising a pamphlet of ninety-four pages, has been issued by the state department of public instruction. The report contains an admirable statement of the problems involved in high-school work under the topics organization and discussion of a course of study, high-school statistics, and bibliography of secondary school literature. There was a great advantage in having this report printed and distributed before the meeting, and superintendents came to Indianapolis prepared to express their opinions. A full account of the meeting appears on another page.

* * *

The Right Attitude.

A notion seems to have gotten abroad that many teachers do their work in a perfunctory way, that the only really enjoyable feature of teaching is payday, that vacations are always yearned for, and ushered in, when they do come, with a great sigh of relief. Nobody knows just how large a proportion of teachers hold such an attitude, and it is not necessary to suppose that the proportion is large. That there are any is bad enough. Some are afflicted worse than others, and the subject is mentioned here with the conviction that there are vast possibilities for improvement in this regard. For, admitting the existence of evils more or less peculiar to the teaching profession, such as political dominance, over-crowded courses of study, uncertain tenure of office, periodical examinations, and some minor defects which are slowly passing away by evolutionary processes, it is yet true that the unpleasant features of the teacher's position depend to a great extent on the teacher's attitude toward his work. If he frets and worries and rebels against existing conditions his attitude is wrong. If he fails to enter into the joy and enthusiasm and satisfaction and daily reward of his work he does not approach it in the true spirit of conquest—the spirit which the farmer in the field, the merchant in his counting-room and store, the chemist in his laboratory, the blacksmith at the anvil, the lawyer in his office, the minister in the pulpit, the soldier in the field, the collier in the mine, all must exercise if they would succeed.

What then, are there no real causes for discouragement and despondency in the schoolroom? Truly there are, many; and the very life of the beings we work with makes our problems peculiarly complex and difficult. So much the greater, then, is the need of both courage and skill. The successful worker in any field is the one who goes out with confidence, rejoicing in his strength, eager to grapple with the problems and the difficulties that face him, always anxious to improve upon the past, thankful for each new day as a new opportunity, glad, if he is a teacher, to find his pupils growing, fertile in resources that will encourage study and forestall mischief, and right the wrong. This, as it seems to us, is the right attitude for a teacher. And though the actual work of governing a school or a schoolroom is much easier than it once was the real problems of teaching call for the continuous exercise of skill, ability and ingenuity.

Superintendent Andrews of Chicago has recently well expressed what we have in mind. "And then the infinitely nice problems thrust upon the modern teacher's thought! At what age is a study or exercise best begun? What aptest correlations can we devise of studies with studies, exercises with exercises, studies with exercises, studies or exercises with play, so as to further two or three ends in gaining one? How far and with what contrivances can you helpfully illustrate a given lesson, and when cast aside illustration, directly challenging pupils' power to think the thing itself? I need not point out the surpassing interest attaching to these problems and to the hundred similar ones confronting all bright latter-day teachers."

Christmas Gifts.

It is told of the magi that when they had been led by the star from the East, and had come to Bethlehem, and had found the King, even though they found him not in a palace, they brought him, as tokens of their adoration, rich gifts of gold and of spices. The King himself, as the Christian world believes, was the gift to us from the great Father of all; and the King's life after a few years of service was given as an example of perfect sacrifice—of complete giving. So it seems that the spirit of giving which so marked this first Christmas is most appropriate to the yearly festivals as they come. It seems appropriate, too, that giving should be a subject for our Christmas thought; and that if this is the world's greatest festival, as we think it is, the spirit of giving is the finest one we can cherish. True giving is love at its best.

"Love is sweet in any guise.
But its best is sacrifice."

Does heroism seem finer? This, too, is only a form of giving—a giving of self, in willingness if not in reality. Do gentleness kindness, patience—any of the virtues—seem greater? Compare them as we will, in the best analysis they all involve giving. It is the spirit of giving, so prevalent to-day, that prompts the efforts to improve social conditions everywhere. It is the spirit that builds and endows institutions for the relief of human suffering, and for the advance of human happiness and power. It is the spirit of giving that leads many a teacher to give to her school a measure of strength and effort out of all proportion to the dollars and cents in her meagre salary. Giving is the antithesis of selfishness. These two are the principles of light and darkness in the world. They are Ormuzd and Ahriman.

But the great beauty in true giving is that it blesses him that gives and him that takes. It is like the quality of mercy. Indeed, the Bethlehem King said that it was more blessed to give than to receive. Is this so in reality or is it a mere platitude that we think might be true in an ideal world? There is no need for either question or answer to the one who knows the real happiness of making gifts of love. The giving that expects a gift in return is unworthy the name. My friend who remembers me sometimes at Christmas-tide with some little token of regard—a book, a picture, an ornament, or even the box of bonbons, and who does this thinking it will add to my Christmas cheer has made us both glad. But perish perfunctory giving! Let us rather bare our heads to the charge of base ingratitude than to give at Christmas as an obligation. Such things are payments, not gifts. They lie far below the level of mere commercialism because they are tainted with deceit.

"The gift without the giver is bare."

What is the charm that keeps Santa Claus immortal? Isn't it the spirit of love and devotion in giving? The reason we are all so fond of the old fellow, even after we get to be on speaking terms with him, is because he is so beautifully unselfish. He never expects a gift in return, and yet he has the greatest joy in seeing others made glad. Witness the jovial face he always wears. Let us protest against the proposition to banish him; rather let us say, live forever! If all our Christmas giving, whether to the little ones or to our older friends, is done in this spirit of sweet and simple sincerity, and if we make sure to include some one, at least, who is needy, then the whole good cheer of Christmas time—bells, holly, yule log, song, and story should be ours richly to enjoy. And so THE EDUCATOR wishes you, *one and all*, a MERRY CHRISTMAS.

England was merry England, when
Old Christmas brought his sports again.
'Twas Christmas broached the mightiest ale;
'Twas Christmas told the merriest tale;
A Christmas gambol oft could cheer
The poor man's heart through half the year.
—*Sir Walter Scott.*

CHILDREN AND SUGAR-BEETS: A PARALLEL?

By T. D. A. COCKERELL.

READING just now in the *Experiment Station Record* an admirable article by M. H. L. de Vilmonin, I was struck by a passage relating to sugar-beets, but perhaps applicable, with certain modifications, also to children. I give the original and modified passages herewith, in parallel columns.

SUGAR-BEETS.

Now, certain growers of beet seed in the north of France once formed the idea—thinking no doubt, in this way to improve their varieties—of growing the plants which were to be used as seed stocks in very rich deeply worked soil, where they were very much crowded together; so much so that sixteen to twenty, or even more, grew on one square meter of ground. The result was that the beets assumed the form, and later the length of a thick whipstock. They were not branched because the roots were very closely crowded together. Their sugar content was abnormally high as the result of their growing so close together, and the conclusions drawn from the form of the roots and their sugar content, as determined in the laboratory, were tainted with error because they did not represent qualities truly acquired, but modifications accidentally imposed by external conditions. Thus these beets which were declared to be of good shape and composition in the laboratory yielded seed which, when sown in the open field, produced branched roots of only moderate sugar content, because the descendants had reassumed their true characters when they were released from the restraint which had been artificially imposed on the parent plants. Those beets, alone, may be considered unbranched that are free from roots when they are cultivatod under conditions that would permit them to become branched if they had such a tendency. In order to obtain seed that will produce unbranched roots, the plants from which the seleetion is to be made must be grown under conditions as nearly as possible like those under which the same kind of plants are commonly grown that are intended for common domestic or industrial uses.—[*Exper. Sta. Record* Vol. XI. (1899) p. 13.]

CHILDREN.

Now, certain educators of children in the United States once formed the idea—thinking, no doubt, in this way to improve the nation—of educating the children who were to be the men and women of the future in very strictly governed schools, where they were very much restrained from evil; so much so that whole classes, or even more, followed exactly the wishes of their teachers. The result was that the children assumed the character, and later the appearance of little angels. They were not naughty because they did not have a chance. Their virtue was abnormally great as a result of their strict bringing up, and the conclusions drawn from their conduct and appearance, as observed in the school, were tainted with error because they did not represent qualities truly acquired, but modifications imposed by external conditions. Thus these children who were declared to have good manners and habits in the school became adults who, when abandoned to the world, developed new habits of only moderate virtue, because they had reassumed their true characters when they were released from the restraint which had been artificially imposed on them during childhood. Those children, alone, may be considered virtuous who are free from evil when they are brought up under conditions that would permit them to show wickedness if they had such a tendency. In order to obtain adults who will have good habits the children from which the adults are to grow must be educated under conditions as nearly as possible like those under which they will have to exist hereafter, in civic, domestic, or industrial life.

The apparent fallacy in this parallel is, that in the case of the beets we are dealing with successive generations, whereas in the case of the children we have to produce our results within a single generation. But is it not true that while the life of the individual is continuous for so many years, the tendencies of the individual are not necessarily continuous, but wax and wane, as if they had lives of their own? And is it not true that courage is developed in the presence of danger, perseverance in the face of difficulties, fidelity in positions of trust? In other words, do not many of the virtues arise through the suppression of their opposite vices, the exercise of choice by the individual being a form of selection analogous to that of the grower of beets? Just as the beet grower gets his results by choosing the best plants through a succession of years, we get our characters as the result of every choice we make, each, if wise, suppressing the bad and allowing the good to grow. But it is necessary, in either case, that this freedom of choice should exist, and if we can help the children to choose wisely, risking the possibility of their doing otherwise, it may be that no better can be done for them.

MESILLA PARK, NEW MEXICO.

NATURE STUDY—TREES.

By D. W. DENNIS.

IN THE INLAND EDUCATOR for August, 1899, I have insisted that the teacher who would teach about trees in his nature-study work must know the common names of the trees; that is a *first* requisite; a book was recommended—Apgar's *Trees*, that has the one virtue that any student can at any time of year learn the name of any tree by means of its tables; he must, of course, be able to find the leaves of the tree. I now wish to say with the same emphasis that the name constitutes a basis for beginning, only; that thing *about* the tree—its adaptation, its uses, its structure, etc., ought to be known; that this is the reason why its name is important; since the publication of the August article a book has appeared[1] that will greatly help the teacher in working out the real lesson that the tree should yield.

USES OF TREES.

It rained all day Friday, November 3, and so we had the pleasure, instead of an outing that had been planned, of visiting the nature-study class of Miss A. of whose methods some account appeared in THE INLAND EDUCATOR for August 1898. She was considering with pupils of about the fifth grade the uses of trees: Joseph knew that the wood of trees is useful for burning, for rails, for lumber, that it yields charcoal, that the bark of some trees yields a solution that tans hides, that spent tanbark or sawdust makes an excellent walk, and that his father preserved a small wood northwest of the house for a windbrake; that willows are often planted along streams to stop the washing away of the bank, and that their branches are used to make baskets. James, whose father is a druggist, said that wood is sometimes distilled and yields acetic acid and wood alcohol and many other useful things; that medicine comes from trees; as, quinine, slippery-elm, sassafras and spicewood teas, etc.; that madder was formerly only obtained from the root of a plant, and that the fruit of trees is food for man and many kinds of animals. George, evidently the hunter of the class added that trees furnish a home for opossums, raccoons, squirrels, etc., and perches for birds and places for their nests. Lucy thought that trees are very beautiful in themselves and therefore of the highest use to man; that they break the stiffness of the horizon line, arch up over a driveway in Gothic sort and give artistic effect to the landscape; that they cast a refreshing shadow.

Miss A., as each new use of a tree was suggested, plied the students with many questions that called out a multitude of details, not known to the students themselves; as, for example, what is Canada-balsam? She had brought from the piano works a large piece of resin in which long ago, and while the mass was yet soft, an insect had been imprisoned; she showed a microscopic slide in which, copying nature's way, she had prepared a mosquito for examination with the microscope. She told the story of Goodyear, who wrote to his sister, "I, too, am a missionary," when he was seeking to perfect the discovery of a useful rubber from the crude product, caoutchouc, of several tropical trees. Every student's life was more pleasurable because of this discovery; they had gum-coats and cloaks, and rubber shoes, rubber erasers, rubber tires for their bicycles, mats for their doors, bands for their packages; they were glad to learn that trees and the ingenuity and perseverance of a good man had brought them so much comfort and pleasure.

Miss A. had asked Lucy to bring Whittier's poem, the "Palm Tree," and read it that day, and when the uses of the cocoa nut and the palm leaf had been talked over, with which, of course, all were acquainted, it was introduced and nothing was ever more striking than the interest which the reading of these verses for a purpose called out in comparison with the too common listless readings one hears; the poem gives twenty-three uses to which the Indian puts the palm; the children were prepared to understand the summary:

> To him the palm is a gift divine,
> Wherein all uses of man combine,—
> House and raiment and food and wine.
> And, in the hour of his great release,
> His need of the palm shall only cease
> With the shroud wherein he lieth in peace.

When the long inventory which questions could bring out was through Miss A. said, "But there are other great uses which trees

[1] *Plant Relations*, by Dr. John M. Coulter: D. Appleton & Co, $1.10.

serve that you have not mentioned: the tree and other plants build up while men and animals tear down; the tree is a trap that catches sunshine and stores it up for future use; under the influence of light it can put together carbon, oxygen, hydrogen, and other elements as animals cannot; we call this photosynthesis which means a putting together by light; it is thus that the plant can construct the fruit which yields the energy of sunlight to us when we eat it, the wood which yields to us the heat and light of the sun when we burn it in our houses, and the power of the sun when we burn it in our engines; this beneficent work can only be done by the green part of the plant under the influence of the light; this is the great work, the great use of the plant; and it is always nicely adapted in some way to get the right amount of light." And Miss A. showed a rosette of mullein leaves to show how all the leaves were arranged to shade each other as little as possible; she showed a spray of soft maple which exhibited, very beautifully, that the petioles of leaves are contrivances to bring the blade to its maximum of light; the stems of leaves that came from beneath were often twice as long as the stems of the upper ones, and they were directed so as to bring the leaf to the nearest available light. She showed two stems of the Norway spruce, one of which grew straight up, the other horizontal; the under leaves of the horizontal stem had crept around to the outer and upper sides to get out of the shadow, as she said; no such thing appeared in the vertical branch. She called the pupils to the window to see a beech tree and note its branches; the lower ones drooped, the middle ones grew straight out, and the higher ones grew up at a greater and greater angle until they became vertical. Gravity could not be the reason; it was only thus that each branch could bring its leaves to the most light; a fir tree with its perfect cone was also in view, and Miss A. said that if its lower branches did not thus grow out longer than the branches above they would die for the want of light, or they would have to droop like the branches of the beech to get it, and this would change its perfectly conical shape; the lower shaded branches of evergreens die when they are planted in groups or grow in the deep forest. This is what gives us the tall, rather than bushy-topped pines in the woods.

Miss A. also has a branch of pine, Japan maple, horse-chestnut, Norway maple and locust, which she displayed to show the varying ways the light can get to every leaf; the pine leaves are needle-shaped and do not exclude the light from any leaves at all times of day; the horse-chestnut and locust leaves are divided, one palmately and the other pinnately, into several leaflets and so let the light through; the Japan maple leaf is cut up into narrow shreds and so the same thing is effected; the Norway maple, as also the sycamore, the mulberry and the elm has broader leaves little cut, but they can therefore be fewer and still do their work, and they are so arranged on the stem that each can get the most light possible. The trunks of trees and stems of all plants are, as Miss A. said, contrivances for bringing the green parts to the light,—to the energy necessary for their highest development.

It was agreed, finally, that hereafter when any tree or other plant is examined for the first time one of the leading questions asked should be, by what structure or arrangement does it bring all its green parts to the right amount of light.

FORESTS AND MOISTURE.

Miss A. explained that when it rains on a forest, every one of its countless leaves causes several drops of water to stop in its hurried flight and that after the rain a tiny portion from each leaf, but in the aggregate a large amount, passes back to the air by evaporation; that the forest soil is covered with sticks and leaves, and so when the water soaks down through them it does not so quickly evaporate back into the air or run off toward the sea; that millions of little rootlets take the water for company several feet down into what would otherwise be an impervious soil; that a forest soil becomes thus an enormous sponge for retaining water; that many of these rootlets lead down to underground reservoirs from which springs burst out at a lower altitude; and so we often owe the refreshing fountain at the foot of the hill to the trees. Ten members of the class knew places where their parents said springs were when the adjacent hills were wooded, but where there are none today.

She explained, too, that while it is a question as to whether it rains more on a forest-covered area, it is certain that the forest detains the water in the hills, and does not let

it hurry off to the sea in destructive floods to be followed by even more destructive drouths.

"Palestine, Asia Minor, and Cypress," Miss A. continued, "were once fertile, populous, rich countries; their coverings of forest were wasted, the accumulated strength of their soil ran down to the sea in their floods, and they became uninhabited wastes; Spain is fast becoming such a country; Austria and Germany have appealed to the forests to restore and perpetuate the fruitfulness of the soil; these countries plant out millions of trees every year, they plant them in forests on their hills and mountains." She said she had spent a summer in the valley of the Line at Goettingen and that after two thousand years of cultivation, the valley has more than its pristine fertility; half the strength of soil of our Ohio valley is gone; thousands of its denuded hills turn the water off to the straightened hurrying streams, almost as readily as if they were tile roofs; destructive floods are wasting our inheritance; we must plant our uplands with forests again; rededicate them to the constructive and conserving forces of the trees; and when the first yearly plantings have grown to a size that fits them for lumber or wood, if we judiciously cut and plant every year, the hills will not only hand back fertility to the valleys but will yield also their full share of wealth, comfort and beauty.

EARLHAM COLLEGE.

TALKS ON THE STUDY OF LITERATURE.—III.

By EDWIN A. GREENLAW, A. M.

ONE of the most difficult problems confronting the teacher is that of determining the amount of assistance to be given the pupil. The unskilled instructor assigns his lessons in blocks of so many pages each, and tests the preparation of his students by expecting parrot-like recitations. Another teacher, in his desire to make easy the road to learning, does the greater part of the work himself. In the one case, the pupils gain nothing in thought-power and are permitted to pass over things which they do not in any true sense understand; while in the other they become mere passive victims of the "pouring-in process." No teacher can hope for the highest success unless he acquires the power of determining, at least with approximate accuracy, the amount of assistance required by the student in any particular case for the proper understanding and assimilation of the lesson.

In some of the older subjects of the school curricula, there is practical consensus of opinion as to the amount of explanation and amplification needed in the good text-book. The problem thus resolves itself into the question as to the method of presentation which should be adopted by the teacher. In the case of English, however, no such unanimity exists. We often hear it said that literature should simply be read by pupils for their enjoyment rather than for mental discipline. On the other hand, we have editions of the classics required for school reading in which all the work is done for the pupil, in which notes are supplied upon every subject that can be suggested by the text, from comments on the nebular hypothesis to the genealogies of Russian monarchs. The true method avoids both these faults; it neither leaves the pupil to his own devices nor leads him to look upon the masterpiece as made up of sentences which serve as convenient pegs upon which to hang textual notes. It holds that the object of all literary study is to develop culture; and that culture is derived neither from an unmethodical toying with literature which is akin to loafing, nor from regarding the masterpiece as an excuse for collecting an indiscriminate mass of materials historical, philological, scientific, theological, and nonsensical.

Some guidance the student must have, and this guidance must be furnished by the teacher and the text-book. It is possible to suggest to the pupil methods of study which will give definiteness to his work, will stimulate him to earnest and original thought, and yet will not divert his mind from the

true purpose of literary study, or do for him the work he should do for himself.

EDUCATIONAL VALUE OF FICTION AND THE DRAMA.

There is a vast difference between reading a masterpiece "to get the story," and studying it to make it a part of one's life. Upon being asked if she had read *Daniel Deronda*, a lady who made some pretension to culture responded, "No, but the story has been told to me." She evidently regarded this second-hand acquaintance with the work as a satisfactory substitute for the study which would have revealed to her the maturest thought of the great author. Again, novels may be read simply for the excitement they afford, and such reading may not inaptly be called literary gambling, as it depends for its interest entirely upon the element of chance. But the study of master-works of fiction and the drama is quite another matter, and it has a high educational value.

1. In such study the pupil gains knowledge of human nature. No work of fiction is worth while unless it conforms to the principles which underlie the nature of man. If a book reflects simply the life of the time, and does not touch upon permanent principles, it is speedily forgotten. Trumbull's *McFingal* had a greater sale when the population of the colonies was three million than that enjoyed by *Evangeline* when the United States contained ten times that number of inhabitants. The one appealed merely to the passions and the prejudices of the time, since it was a satire directed against the Tory royalists in the time of the Revolution; but the other represents that love and devotion which appeal to every age and every people.

We must know human nature in order to adapt ourselves to our environment. A man's success in life is dependent, in no small degree, upon his ability to judge of character. The novelist and the man of affairs are alike in that each is a keen observer of human nature. This is admirably illustrated in the recent novel, *David Harum*. Mr. Westcott, the author, was a business man who recorded the results of long study of human nature in the form of a novel. He had the gifts which are necessary to the successful novelist; such as, power of expression, humor, power of delineating character; but he gathered his material from his busy, practical life. In his story we gain some of the results of his observations, a fact which illustrates this value of the study of fiction. In the study of such masterpieces as *Silas Marner*, *The Merchant of Venice*, and *Macbeth*, the pupil learns some of the principles upon which human nature is based, and this knowledge cannot but be of value to him in his after life. Says Dr. Harris: "In no way can the individual learn to know the practical problems of human nature so effectually as through art and literature. He learns to see how the deeds return upon the doer to bless him or to curse him. The individual learns to know his greater self—the social."

By this study the judgment is developed and the powers of observation quickened. When these questions are properly taught, eager interest is aroused in the characters and the incidents. The student is continually weighing motives and analyzing actions. He becomes interested in extending his observations to real life, and thus there is opened to him a field of investigation limitless in its possibilities and of the highest utility. The education of the past emphasized the verbal memory; students were not supposed to think, and indeed, original thought was discouraged. The essence of the new education is contained in Droysen's maxim, "Understanding by means of investigation."

3. The cultivation of taste is one of the chief aims of the study of literature. No student can thoughtfully analyze *Silas Marner* or *Macbeth*, without gaining new aspirations after culture and new standards of taste. In order to attain these results the teaching must be carefully planned, as no haphazard work will prove successful. Mechanical methods must be avoided. Of late years there has been a rebellion on the part of educators against the old methods of teaching English grammar. Instead of the wearying round of parsing and the use of the diagram, teachers have come to see that the study of grammar must yield thought-content and make for culture as well as for discipline. Similar to the old formal methods is that by which in the study of literature pupils are made to classify and to define rhetorical figures without observing their emotional value. The pupil should not only name the figure, but he should also tell whether it is apt or expressive and should give reasons for his answer.

Similar remarks may be made as to the

necessity of giving proper attention to the diction of the author. It is well and good that the student be able to explain references and to define words; he should also observe the value of the words judged from the standpoint of emotion and imagination. Especially is this vital to the proper study of Shakespeare. The pupil who does not feel the witchery of the words used by the master fails of deriving the highest good from his study. Words which by their sound suggest the meaning intended by the writer; words which are in themselves rhetorical figures, packed with imaginative significance; words which are poetic by form and by use; these should receive due attention by teacher and class. Unless he is taught to do so by the instructor pupils will hurry over the work without fully appreciating the imaginative power of the author's diction. On the other hand, a little patience and skill will develop even in the crudest minds power of poetic appreciation which though immature and poorly expressed is big with promise for the future, and which is worth any amount of quotations from critics carefully copied and piously delivered.

The study of masterpieces of fiction and the drama affords to the teacher unusual opportunities for this cultivation of taste. By the very nature of the subject-matter, the imagination is appealed to constantly, and the emotions are reached more directly than in other forms of literature, with the possible exception of poetry. The pupil finds abundance of material for developing his power to imagine and to feel, and these are prime elements in culture.

4. The study of these forms of literature assists the pupil in his efforts to gain ease of expression. Whatever power to see and to feel is gained by the study of literary masterpieces will result in increased power of expression. The first requirement for fruitful work in composition is an abundance of thought-material, and this is supplied by these studies. Themes for character sketches will readily suggest themselves to the teacher and the student, and such exercises lead naturally to original work in character delineation by the pupils. The pupil observes closely Irving's masterly portraits, and is encouraged to attempt similar descriptions of persons whom he has seen. Or he notices some bit of vivid description, and tries his hand at describing some similar place or scene. We cannot expect pupils to write well until they have learned to observe, to feel, and to know, and these powers are developed to a high degree by the study of fiction and of dramatic forms.

5. Finally, this study should make pupils think. Perhaps this has been implied in the preceding paragraphs, but the point is so important that it may well be reiterated. Let not the teacher think himself doing satisfactory work if he appeals to the memory alone, or even to the imagination. Literature is the record of the thought men have considered worthy of preservation. In its very essence, then, the study of literature implies the study of thought. Therefore, the pupil must in a sense re-experience the author's thought, and his mind gains in power in proportion as he assimilates the thought of the master. By his questions, by the topics which he sets for written work, by the investigative work he directs, the teacher must lead the student to think. The question "Why?" must be often heard, and every possible means be taken to prevent the pupil from reading "to get the story," or to memorize details, or to learn notes and parallel references. Thought makes character, and the teacher who makes thinkers of his students does them incalculable service.

APPLICATIONS TO "SILAS MARNER."

In concluding the present article, and by way of introduction to some comments on the teaching of Shakespeare's plays in secondary schools, it may be well to give some specimen topics based on *Silas Marner*. In these topics, which are meant to be suggestive merely, emphasis is directed to the following three points: (1) the study of character development as portrayed in the story; (2) the selection of topics and questions of a nature calculated to assist the pupil to think for himself; (3) proper composition work which shall indirectly assist both these ends, in addition to increasing power of expression. Topics similar to these may be dictated to the class, to be worked up while the lesson is being prepared, or they may be used by the teacher as a basis for his own questioning upon the text. There should be much of written work. Short paragraphs which show original thought, even if imperfectly impressed, are worth more than dozens of pages of critical opinions copied from the encyclopedia or other

works of referenee. It is perfectly idle to say that this work may be left to the college, that we cannot make literary critics of high-school pupils. The facts are that the large majority of high-school pupils will never see the inside of college walls. All their lives long they will be readers. Shall the school send them out with no principles by which they may be guided in their choice of reading? Shall they be dismissed from school at the close of their period of training with no conception of the difference in value between *Silas Marner* and the latest story in the patent sheet of a country newspaper? The school teaches boys and girls to read. They will read fiction of one kind or another. The school must see to it that some elementary canons of criticisms are established, that the pupil can wisely select his reading, and that he can tell the difference between pure literature and fustian.

Suggestive Questions on "Silas Marner," Chapter II.

1. What was the effect upon Marner of his removal to Raveloe? Would it have been the same (a) upon an educated man? (b) upon one into whose life a great affliction had come? (c) upon a child? (d) upon an old man?

2. Did it occur to Marner that he could live a religious life in Raveloe as well as in his former home? Why or why not? What, then, was the character of Marner's religion? What is the meaning of the author in the expression, "Uttered phrases at once occult and familiar?" Observe if the same idea is developed in a later chapter with another character. Does such religious teaching do any good to ignorant persons? Your reasons? Which did Marner the most good, what he heard in the little church, or the associations?

3. "There were no lips in Raveloe from which a word could fall that would stir Silas Marner's benumbed faith to a sense of pain." What does this mean? Suppose Marner had gone to another place similar to Lantern Yard rather than to the country—what then?

4. After recovering from the first benumbing effect of his removal, how did he approach his work? What statements indicate that he became a machine in his manner of working? Would you regard his life at Lantern Yard as having had any incentives? What? Do, then, incentives vary with different persons? Give illustrations. In general, what is the effect of lack of incentives? Can any man long be without some incentive? Was Marner's incentive at Lantern Yard lofty or not? What incentive has a statesman? a brakeman? a farmer? a dock-hand? a miser? a coal-digger? a millionaire? a physician? What new incentive now comes into Marner's life? Why?

5. The author says Marner had always loved money. Do you see any difference between that former love and his new passion? Account for what you say.

6. How did the experience Marner had with Sally Oates affect him? If this had happened before he completed the work for Mrs. Osgood what would have been the effect? Why did he refuse money for charms and medicine, when he was so desirous of acquiring wealth? What new view do you have of his character? Still, what was the effect of his refusal upon his relations with his neighbors? Would it have been better for him to have taken money for the charms? Was Marner below or above the average of the class to which he belonged? Support your statements by illustrations.

7. What was the relation between the increase of his wealth and the amount he spent upon himself? Why? If he saw no use for it, and did not intend to spend his money, why was he so miserly?

8. What was the effect of this new life upon his appearance? Why does the author apply the epithet "insect-like" to him? Like what insect? Why are his eyes again mentioned? How have they changed? Watch for another change in them farther on in the story.

9. What do you think of him after reading the incident about the pitcher? Can you illustrate from your own experience the effect this incident had on Marner? Suppose he still lived at Lantern Yard—would he have been more or less pained when the pitcher was broken? Why did he put the broken pieces in the old place? Watch and see if this spark of affection ever dies out from his nature.

Summary of the Chapter.

Do you think Marner was an ordinary weaver? What, if anything, seems to indicate that he was different from the ordinary laborer and the ordinary miser? Write out your opinion of his character, as formed from your study of these two chapters.

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CARDINAL PRINCIPLES IN THE INTERPRETATION OF HISTORY.

By FRED AUSTIN OGG.

THESE few suggestions are intended primarily as guides in the *study* of history; but inasmuch as *teachers* of history must, first of all, be *students* of history, and inasmuch also as the true teacher must at all times be able and ready to assume the standpoint of the pupil, one feels justified in inviting the teacher's attention to certain paramount principles relating to the correct interpretation of history.

In the first place, what is history? What con-

tent do we put into this word which is so familiar to everyone, yet which is capable of such widely varied interpretations? The writer remembers having heard a high-school teacher—a man of unusual ability, too—indignantly express views somewhat like the following: "I have no patience with the man who will spend the best years of his life in the study of history. It seems to me that any sensible man can find better employment than revelling in the horrible mass of crimes and treacheries and bloody wars which make up the history of mankind." Now I am not quite sure whether this sentiment was due to the fact that the speaker was a natural-born pessimist, or to a bad digestion, or to a sincere and settled conviction.

However that might have been, I know that the blood of the Anglo-Saxon schoolboy was stirred within me, and though unable (and unwilling ?) to endeavor to convince "the teacher" of the error of his ways, yet due, I suppose to that same Anglo-Saxon inheritance—the purpose of the school-boy to persist in the study of history was only the more confirmed. If that teacher was correct in his assumption that history is made up of a recital of "crimes and treacheries and bloody wars," why there is nothing more to be said. His position was impregnable, and the uselessness, if not harmfulness, of history is not a debatable question. Nay, more; if history consists in a dry recital of events chronologically arranged and crowded together like beads on a string—if, in other words, the outstanding facts concerning the Roman people can be summarized, tabulated, pressed between the two covers of a diminutive volume, and rightfully labeled "The History of Rome"—then also is the afore mentioned teacher's position a very tenable one.

But no sensible person will accept this as final. So let us endeavor to formulate some idea as to the real purport of history. Possibly some one asks for a definition of history. Well, there are some things which can not be defined, at least with any degree of accuracy. One may have a very adequate conception of the thing in mind, but upon attempting to crystallize his thought into words he becomes painfully aware not only of his own mental inability, but oftimes of the inherent defects of the language. Some things, however, which cannot be defined can be described. Perhaps, then, an attempt in this direction may be made with a little more assurance. In the first place, history deals with man—which saying is certainly trite enough not to shock anyone, even my friend the high-school teacher. But, wait a moment. That axiom would more nearly express the thought if the word "man" were capitalized and underscored two or three times. Man—not any particular individual, but the great mass of men; man in every phase of his activity—in private and home life, in politics and in religion, in the market, on the battlefield, in the artist's studio or in the scholar's retreat, —in brief, *man* as he actually exists—this is the subject-matter of history.

In the final analysis there are but two great fundamental branches of knowledge—natural science and history. The latter subject according to this extremely broad conception therefore embraces all the activities and endeavor of mankind incident to the long and painful struggle to rise above the plane of primeval barbarism, and to move in an ever-upward course toward the restored image of man's Maker. The slow and almost unconscious process by which primitive man gradually adjusted himself to the necessities imposed by Mother Earth, the emotions and passions and struggles which attended the earliest organizations of society, the shifting of the scenes due to migrations, wars of extermination or consolidation of nationalities, the thoughts and aspirations of men as expressed through art and music and literature, the rise, growth, and differentiation of political ideas and methods of government, the expression of human ingenuity through invention and discovery, the growth of morals and the influences of religion, finally, the great common life of the people—all these are elements which enter into that composite structure known as history. The true student must be able to discern the interrelations and relative importance of all these parts. For the sake of clearness and convenience this great field is broken up into numerous divisions — anthropology, sociology, political economy, archæology, philology, art, literature, political and constitutional history, military history, law, and various other branches of human knowledge. But it is a matter of prime necessity that all these contributions to history be conceded their due places in the great scheme.

History, then, in the narrower and more technical sense partakes of the above elements in various degrees—fundamentally of political and constitutional development, incidentally of art, literature, and sociology. The latter are side lights to be employed chiefly as they aid in tracing the tortuous current of politics. There can be no satisfactory knowledge of history unless it take into account every influence and emotion that has ever swayed the human mind. But the real kernel of history lies in the crystallization of mankind into *political forms*. These

considerations upon the general nature of history lead to certain cardinal principles which should guide in the interpretation of the subject:

1. *Regard for the unity and continuity of history.*—It is an error all too common to look upon historic events as mere isolated facts. A correct appreciation of any age, or the crowning achievement of any age, is conditioned upon an understanding of the circumstances and occult influences lying back of the external phenomena. For example, the day has passed when it was deemed sufficient merely to know that in the year of our Lord, 1492, on the fourteenth day of October, America was discovered by one Christopher Columbus, an Italian sailing under the patronage of Isabella of Spain. The deepest significance of this event can be appreciated only when regarded as the natural and inevitable outcome of weary centuries of European thought and endeavor. The discovery of America constitutes an historical process which was working in the minds of men all the way from the earliest Greek philosophers down to the discoverer himself. In this process the speculations of Plato, Aristotle, Eratosthenes, Strabo, and the great host of Greek and Roman philosophers and geographers; the brilliant prophecies of Cicero and Seneca and Toscanelli; the poetical imaginings of Horace and Virgil and Ovid; the great rivalries in mediæval commerce; the impulses generated by the spirit of the fourteenth and fifteenth centuries,—all these elements contributed to the discovery which is comparatively meaningless without knowledge of them.

There is nothing which will so forcibly reveal the principle of the unity and continuity of history as the comparative method of study. The essence of history is the phenomena of institutional life. The value of a careful study of contemporary nations, and fragments of nations which have fallen by the wayside at widely separated stages of civilization is certainly much greater than we have been wont to suppose. The remote corners of India and Russia—chiefly through the labors of Sir Henry Maine—have already become not only fountains of knowledge concerning primitive institutions but exceedingly instructive parallels to certain phases of modern western civilization. For, in India, where the old Aryan customs and political forms have been caught and held in the crust of immemorial observance, we have a rare opportunity to witness examples of our own race in its infancy. One of the greatest triumphs of recent investigation is the discovery that human beings, in different parts of the world, but passing through corresponding stages in the progress of civilization, develop similar ideas and crystallize them in institutions which show a general law of uniformity; subject, of course, to minor local variations.

The historian Freeman declares that "History is past politics and politics present history." This dictum contains a statement of the chief reason for urging the intelligent study of history. The author of *Social Evolution* ventures this criticism upon the work of the historian: "He takes us through events of the past, through the rise and decline of great civilizations, ... through the development of social systems which are even spoken of as organic growths, through a social development which is evidently progressing in some direction, and sets us down at last with scarcely a hint as to any law underlying it all, or indication as to whither our own civilization is tending." To relegate this criticism to the past is the mission of the modern student of history. To prove that history has an intensely practical phase by bringing it to bear upon the present-day problems in economics, sociology, diplomacy and law is the endeavor of a school well represented by ex-president White of Cornell. In these latter days we hear of a law of civilization and decay whose inexorable sway through the ages is being interpreted as an ominous portent for the American republic. At any rate it is certainly a cause for relief to see the character of historian and statesman blended as often as possible. To delve to the roots of political growths, to discover the laws of social movements, to determine the relative value of human institutions, and in the fires of keen intellect to forge this knowledge into implements for the lawmaker of to-day—such is the modern spirit of history. As a corollary of the principle under discussion it may be stated that institutions must be regarded, not as creations, but as growths. There are few, if any, sudden movements in history. Great events, in the eye of the casual observer, appear as mountain peaks—bold, rugged, and isolated. But the careful student knows that just as the peaks in a mountain chain rest upon an enormous substructure of earth and rock so must great events in history be considered as outcroppings of some mighty movement beneath the surface.

2. *Necessity of "breathing the atmosphere of the age."*—If there is one thing more than another which gives rise to fallacious judgments and a generally warped view concerning historical processes, it is the persistence with which our accumulated knowledge and more cosmopolitan outlook throws false light upon the works of the

past. To illustrate: If I wish to understand the Homeric conception of the size, shape, and configuration of the earth, it is first of all necessary that I erase all the geography which I know, and which could not have been known by the old Greek. Having lost sight of all the world except a fringe of land about the eastern Mediterranean, with nothing but naked eye and a vivid imagination. I take my stand upon the soil where the *Iliad* and the *Odyssey* were born—and then simply endeavor to feel what the poet felt, to see nothing more than he could see, and to work out some sort of system to things as he had to do. And then as later ideas and discoveries appeared one by one, ever modifying the old system, I must hold myself in check and live no faster than the people lived; my ideas must expand as theirs expanded. Herein lies a very important principle of historical interpretation. To the person who has never accustomed himself to the study of human progress in this manner, such an experience will bring a veritable revelation. In effective study of any age or historical movement one must throw aside the civilization that has grown up about him and so completely bury himself in the thought and life of the period under consideration that he may see things in their native light instead of by the oft refracted rays of subsequent progress. As a means to this end an intelligent study of illustrative literature and art works is exceedingly valuable. Nothing makes history more *real* than the well-written historical novel—such as may be found in the works of Scott, Thackeray, Bulwer, Kingsley, and Hugo. Literary endeavor has always a close relation with the political and social life of the people. And, so it follows, that that life can be but half understood if its varied expression in the way of literature, art, and philosophy is disregarded. If the student is to come into vital touch with the spirit of any great movement in history, be it the consolidation of the Saxon kingdoms, the French Revolution, or the Civil War in America, he must take hold upon all the influences—literary, social, political,—which were working at the root of the movement and which controlled its direction and intensity.

3. *Emancipation from servile hero-worship.*—The modern spirit of history is leading rapidly in the direction of deliverance from the hero-worship which in the past has so warped our views of social and political movements. The real heroes of history are rendered no less heroic and suffer no degradation when we snatch from their heads the halos with which a superstitious and awe-stricken populace has crowned them, and which because of their sparkling brilliancy have only blinded the people to any adequate appreciation of historical processes. We are coming to realize that Luther was not essential to the Reformation, that America would have been discovered in a few years after 1492 had Columbus never lived, and that the separation of the American colonies from the mother country did not depend upon George Washington or any other one man. In other words, every historical process involves the movement of vast masses of mankind; and it is incorrect to imagine that they who head the movement also constitute the movement. Let it not be understood that the great characters in history are to be ignored. I merely wish to emphasize that that is not *history* which deals only with the great individuals, that is biography; and biography is only a part of history.

4. *Fairness in Judgment.*—The same truth may be viewed from a great number of very different standpoints. A single fact in nature is interpreted by a dozen scientists sometimes in a dozen different ways. The phenomenon of human life—with which history must deal—is infinitely more complex and therefore affords much more ground for honest differences of opinion.

Prejudice has no place in the study of history. In the contemplation of any historical movement the student must allow himself or rather *force* himself to assume the position of the actors in it and judge the outcome purely upon its own merits. For example, in the interpretation of the Civil War one must realize that there was a great fundamental difference of opinion as to the nature of our constitution; that there were many incontrovertible arguments on either side, and that the conflict was not merely one of virtue and honor against treachery and stubbornness, but one of ideas against ideas fought with equal sincerity and devotion.

These are but a few considerations which should be borne in mind by the student of history. The importance of true historical study cannot be over-estimated. "When we reflect," says Stanley Hall, "that what men think of the world depends upon what they know of it, it is not surprising that the wider altruistic and ethical interests, which it is the special function of history to develop, rarely become strong enough to control narrower and more isolated and selfish aims in life." The educational value of history is more than equalled by its moral value; by it we indeed become the heirs of the past and the prophets of the future.

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CHRISTMAS IN OTHER LANDS.

DIRECTIONS TO TEACHERS.—The most interesting and valuable thing about the work will be for the children to learn that there are other people besides their friends and acquaintances, —peoples with homes and Christmas and toys and games unlike ours. The appearance of the country and of the houses and the dress will need the most emphasis. Show pictures, dolls, models. Let the children paint. Tell a story for each country. Let it have for subject the preparation for Christmas and the enjoying of the holidays in a certain family. Name the members of the family and make them as real as possible. Let there be action and dialogue in the story. Let the children act out any part of the work possible. Points for the stories:

NORWAY.—Mountains with snow and fir forests; length of day; mode of travel; house; dress of people; preparation for Christmas—tree, decorations, making of presents, cooking; length of holidays; feasts and dances; feeding cattle and birds; throwing of gifts.

ITALY.—Climate; flowers; city—streets, art, houses, no yards, beggars and street musicians; outdoor bazaars, shopping; "buona festa;" presents from the urn; children speak in church.

HOLLAND.—Dikes; canals; skating; dress of people; houses; tile decorations; Delft dishes; St. Nicholas—his appearance, his mode of travel, children leave feed for his horse, where the presents are put.

BOOKS OF REFERENCE.—*Book of Days*, England. *Atlantic Monthly*, vol. 70, Dec. 1884, England. *Harper's*—vol. 56, Jan. 1878 "Christmas in Venice;" vol. 46, Jan. 1873 "Christmas throughout Christendom," O. M. Spencer; Holland, p. 247; Italy, p. 254; vol. 78, Feb. 1889, March, 1889, April, 1889, "Norway and its People," Björnson. *Youth's Companion*, Sept. 5, 1895, "Christmas in Italy."

SLOYD AND NUMBER.

The work in Sloyd and number is the natural outgrowth of the work in science, history and literature; it also embraces the making of apparatus, articles needed for home or school, and work appropriate to the season of the year—Christmas, Valentine's Day, etc.

If the children are thoroughly interested in the construction work and are allowed to suggest and make plans for the work, they will be anxious and willing to spend any amount of time in overcoming all difficulties which present themselves. In this way the children become familiar with the units of measurements—inch and foot; also with the processes of arithmetic, which they demand for the completion of their work—usually including some work in addition, subtraction, multiplication, division and fractions.

MOTHER GOOSE FOREVER.

Some people doubt the tale of Pocahontas;
Some say we must give up our William Tell;
What shall we do, should they begin to want us.
To give up our dear Mother Goose as well?
Give up the dear old lady? No, no, never!
The bond between us nothing shall unloose;
The links that bind us to her nought shall sever;
The children's patron saint is MOTHER GOOSE!
Then keep a welcome in the warmest corner
Your kind hearts have for Mother Goose to fill,
Each year with Pringle, Muffit, Prim and Horner,
For Simon, Shaftoe, Trot, and Jack and Jill,
Daffydowndilly, Bo-peep, Pumpkin-eater,
Nan-Etticoat, and him who stole the tarts,
And Mother Goose herself than all the sweeter,
For Mother Goose herself is Queen of Hearts!

—*Chicago Normal School Leaflets.*

THE VALUE OF PLAY IN THE DEVELOPMENT OF THE CHILD.

It is possible that Greek games have been worth more to the world than Grecian philosophy. Tossing the ball won a place in Homer's *Odyssey*.

Many of these games were played to music. The beautiful Nausicaa danced the ball-tossing game. The superiority of the Greeks in arms and literature was due largely to the fact that they indulged in vigorous and manly games.

The Duke of Wellington believed that Waterloo came to crown the glory of English arms not because of superior military training of his soldiers, but because of the hardy character of English sports. Most of us are much prouder

of our records on play-grounds in our childhood than of any success that we may have gained in after life. The most pleasant recollections of school life are connected with honest play. The chief objection to city schools is that the play-grounds are crowded and small, thus limiting the child's activity and opportunity to develop the body by indulging the play instinct.

Play is important in the development and education of all young animals. The brain presides over motion, and psycho-motor centers are educated by play. It is evidence of distinct race advancement when games are played. Savage and inferior races have little capacity for play. Teachers in our Indian schools are trying, with only limited success, to introduce games. Base ball is beyond their present capacity. Team games are too complicated for young children. They enjoy only the simplest games. Dogs enjoy many games, and it is one of the best ways to develop their intelligence. They can easily be taught to return an object tossed away in sport or thrown into a body of water. The dog will become so fond of many games as to enter upon them with almost tireless zest.

The bright and happy faces of children at play are in marked contrast with children at tasks and it is not difficult to believe that play has a far greater educational value. Brain centers of coordination and fibers of association are developed by use. The brain and spinal cord are developed by play. The idea of the great Froebel was to make use of childish amusements in the education of the child. This is the right way to interest the child and secure his attention.

Boys ought to be encouraged to swim, ride, and hunt. There is nothing better to cultivate courage and endurance than to fox-hunt across the country in late adolescence or early manhood. I will not say that boys should be taught to fight, yet I am certain that the best type of boy will defend himself with vigor if the occasion should arise. The rough virtues are not to be despised, and are necessary in the development of the highest type of manhood. Boxing, football, fencing and even student-dueling make students brave, and contribute not a little to race vigor. The world never yet admired a coward, and certainly Americans should endorse all games requiring pluck and energy, A boy should be given a jackknife early. He will cut his fingers, but his mother will enjoy tying them, and if there is any especial difficulty the family doctor will be willing to help for the usual reward. A boy will never be a handy man unless he has handled tools in childhood. Give him a hammer, even if he should drive a nail in the wall and cry over a mashed thumb. He will soon forget the pain and take pleasure in the tool.

Work will never take the place of play. There is no joy in tasks. Pleasure affects both body and mind favorably. We need many stored-up memories in order to meet the difficulties of life with optimism. The important functions of digestion, circulation, and respiration are carried on better when we are happy. Strength and pleasure march through life hand in hand as beautiful to look upon as youth and maiden. The heart bowed down unfits the mind and body for the performance of duties.

If we wish children to have robust bodies we must encourage play. There is no sadder sight than a precocious child that has no zest for play. It is almost certain to develop nervous disease, and is not likely to accomplish anything in the way of real culture. The truth of evolution is illustrated in the growth of every individual, and the child reproduces the social history of the race in its play. The history of primitive man lives again in the life of the child.

WALKER SCHELL.

THE TRUE SANTA CLAUS.

There's never a home so low, no doubt,
But I in my flight can find it out;
Nor a hut so hidden but I can see
The shadow cast by the lone roof-tree!
There's never a home so proud and high
That I am constrained to pass it by;
Nor a heart so happy it may not be
Happier still when blessed by me!

What is my name? Ah! who can tell,
Though in every land 'tis a magic spell;
Men call me that, and they call me this,
Yet the different names are the same, I wis.
Gift-Bearer to all the world am I,
Joy-Giver, Light-Bringer, where'er I fly;
But the name I bear in the Courts above,
My truest and holiest name, is Love.

—*Selected.*

"Man wants but little here below;
Nor wants that little long."
'Tis not with *me* exactly so;
But 'tis so in the song.
My wants are many, and if told
Would muster many a score;
And were each wish a mint of gold
I still should wish for more.

—*John Quincy Adams.*

MATHEMATICS.

EDITED BY

ROBERT J. ALEY, Ph. D., Bloomington, Indiana.

HISTORY OF ARITHMETIC.

XVII.—NOTED ARITHMETICS.

Hodder's Arithmetick—Or that Necessary Art made most easie. Being explained in a way familiar to the capacity of any that desire to learn in a little time. By James Hodder, Writing Master.

This book probably appeared in 1661. The edition here described is the thirteenth, bearing the date 1681. The original is 'revised, augmented, and above a thousand faults amended by Henry More, late Servant and Successor to the Author.' Hodder is the immediate predecessor of the famous Cocker, and in the opinion of DeMorgan would have prevented Cocker's fame had he not persistently retained the old Galley method of division.

The 25th edition of Hodder's Arithmetic was published in Boston in 1719, and according to W. D. Henkle was the first arithmetic published in the United States. The book is dedicated by the author "To His Really Loving and Most Worthily Honored Friend Josias Dewye, Merchant and Citizen of London." One can not help wondering if Josias Dewye is not an ancestor of our famous admiral.

But little is known of the author, James Hodder. He is unknown to the biographical dictionaries and encyclopedias. In his preface he says: "Having for sundry years kept a writing school in this city, and thereby gained some experience in that commendable art, I thought good heretofore to publish somewhat thereof. And now for the better completing of youth as to Clerkship and Trades, I am induced to publish this small Treatise of Arithmetick, which though it be dedicated more particularly to my much honoured friend, yet being assured he can be content that others should partake of the benefit thereof, I make bold thus to communicate it."

The first definition in the book, that of number, is curious and interesting. "A Number is a multitude of Units put together; as, 2, 3, 4, 5, 6, &c. Therefore an Unit is properly no Number but the original or beginning of Number, for it being multiplied or divided by itself, is resolved again into itself, without any increasement or decreasement."

In the consideration of the fundamental operations, denominate numbers are used immediately after simple ones. In this way the continuity of the operations is clearly established.

The following proof for multiplication is given: "

3712
48
29696
14848
178176

First, cast away the nines of the multiplicand 3712, saying 3 and 7 is 10, cast away 9 and there remains 1; then 1 and 1 is 2, and 2 is 4 which set to the right side of a cross, thus +4. Then cast away the nines of the multiplier, saying, 4 and 8 is 12, cast away the nine, and there remains 3, which place on the left side thus 3+4, then multiply the one by the other, saying 3 times 4 is 12, cast away nine, and there remains 3, which place at the top of the cross thus $\frac{3}{3+4}$. Lastly, cast away the nines of the product, saying 1 and 7 is 8, and 8 is 16, cast away nine and there remains 7; then 7 and 1 is 8, and 7 is 15, cast away nine and there remains 6; then 6 and 6 is 12, cast away nine and there remains 3, which place at the bottom of the cross, and if the top figure and the bottom be alike, your work may be true."

The rules given are all arbitrary. No attempt is made to justify them. For example, the rule for division of fractions: "Set that fraction which is the dividend on the left-hand, and that for divisor on the right-hand; then multiply cross-wise the numerator of the dividend by the denominator of the divisor, and subscribe the product for a new numerator. Likewise multiply the denominator of the dividend by the divisor's numerator, and the product shall be a new denominator. Example: What is the quotient of $\frac{1}{3}$ divided by $\frac{1}{4}$? Place your fractions thus,

$$\frac{1}{3} \times \frac{1}{4}$$

(facit $\frac{4}{3}$ or one whole one, and $\frac{1}{3}$)"

with this X character between them and work according to the directions before given.

Of course the golden rule, both single and double receives full treatment. It is wonderful how much virtue the old writers saw in simple and compound proportion. Interest, discount, fellowship, equation of payments, and alligation are all treated in full. A few pages at the end are devoted to mensuration. No mention is made of square or cube root. The book very appropriately closes with—*Laus Deo. Finis.*

SHORT CUTS—I.

In this age of close competition, success comes to him who is able to accomplish most at the least expense. In the expense account the saving may be in time or in effort or in both. Teachers should recognize these conditions and should direct their work so as to prepare the boys and girls to meet them. Every pupil in our schools has a right to demand the training that will make him alert, and that will make him ready to seize the line of least resistance. Whatever other subjects may do, it is certain that arithmetic offers a fine opportunity for this sort of training. It is equally certain that in many cases the arithmetic is so taught that it fails to give the results that we have a right to expect from it.

The *short cut* in arithmetic should be taught because it saves time, decreases the mental effort, insures greater accuracy, and promotes alertness. That the *short cut* does all these things is recognized by the mathematician and verified by the psychologist.

In presenting a number of *short cuts* it is not the intention that they shall displace the standard methods, but rather that they shall supplement them. The standard methods must form the basis for a rational understanding and use of the shorter ones.

ADDITION.

(1) *Know the addition table.*—It is strange but nevertheless true, that few persons know the addition table so well as they know the multiplication table. Skill and rapidity depend very largely upon perfect acquaintance with the sums, two at a time, of all numbers below 10. There are but 45 of these sums so that the task of learning them is not very great. Any teacher can easily place these 45 combinations on the board, and by frequent drills thoroughly familiarize his school with them. It is the price that must be paid for skill and rapidity.

(2) *By proper combinations.*—After the addition table is mastered, the line of least resistance is frequently found in combining in such a way as to change the addition to a multiplication. Some pupils do this of their own accord. It should be explained to all, and they should be encouraged to use it. Consider the following problem:

37865
96372
38764
27379
86196

In adding the unit's column group by 10's, thus 6 and 4, 9 and 1 out of 2 and 5 and 1 making 26. In the ten's column group by 7's, thus put a one from the 9 with each of the 6's, giving five 7's which with the 2 to carry makes 37. In the hundred's column there is no particular advantage in grouping as the numbers are small. In the thousand's group by 7's getting five 7's and 1 or 36. In the last column group by 9's getting three 9's and 1 or 28. Boys and girls in the lower grades will readily catch the spirit of grouping and will use it most effectively.

(3) *Adding two columns at once.*—For most persons this will be useful only in adding two or three two-place numbers. The professional accountant will drill himself until he is able to apply it to his ledger columns. In adding 63 and 98, say 63+100—2=161. 76+65 may be seen as 2×70+1=141. 67+48+86 may be considered as 70+50+81=201. These illustrations are perhaps sufficient to call attention to the various means by which the mind's effort is eased and at the same time speed gained.

The great *short cut* in addition is the addition table. Drill, drill, drill, and then review, review, review. In this way the royal road to perfect and speedy addition is made.

SOLUTIONS.

Problem 35, page 221, Cook and Cropsey's *Advanced Arithmetic.*

"How many acres does a square tract of land contain which sells for $80 an acre, and which is paid for by the number of silver dollars that will lie upon its boundary?"

Every 80 silver dollars on the boundary corresponds to one acre. 80 silver dollars, edge to edge, extend a distance of 80×1½ in.=120 in.=10 ft. Hence, every 10 ft. on the boundary corresponds to one acre. Now, suppose the field divided into equal triangles having their vertices at the center of the square tract and their equal 10 feet bases in the boundary line. Each of these triangles will contain one acre. The altitude of any one of these triangles is one-half the side of the square. In order to find the altitude of a triangle we divide the area by one-half the base. 1 acre=160×30¼×9 sq. ft.=43560 sq. ft. 43560÷5=8712 number of ft. in altitude of triangle and one-half the side of the square.

2×8712 ft.=17424 ft. side of square tract.

17424 ft=1056 rd.

1056×1056=1115136 sq. rd.

1115136÷160=6969.6 A.

The problem may also be solved by supposing it divided into rectangular strips the length of the tract and the width of 20 silver dollars or 30 in. Each of these strips will contain one acre. From these facts the length of the square can easily be found, and then its area.

Problem 3, page 337. For a figure see the *Advanced Arithmetic*, page 337.

The irregular field is made up of three triangles, A E D, A D B, and B D C. The figure and the given distances show the base and altitude of each of these triangles. The area of a triangle is one-half the product of the base and altitude. In the triangle A E D, A D(=40rd) is the base and E G(=46 rd) is the altitude. The area is $\frac{40\times46}{2}=920$. In the triangle A D B, A B(=46½ rd) is the base and D F(=37 rd) is the altitude. The area is $\frac{46\frac{1}{2}\times37}{2}=860\frac{1}{4}$. In the triangle B D C, D C(=52 rd) is the base and B H(=38½ rd) is the altitude. The area is $\frac{52\times38\frac{1}{2}}{2}=1001$. The area of the field is the sum of the three triangles, or $920+860\frac{1}{4}+1001=2781\frac{1}{4}$. This, of course, is in sq. rd., which reduced to acres is 17.38+A.

NOTES.

Dr. E. S. Loomis of Cleveland, Ohio has a most timely article in the October *Education* on "The Teaching of Mathematics in High Schools." He treats the subject under the three heads: The nature of mathematics, the preparation of the teacher, and the classroom work. The article is one of the very best that has appeared upon the subject. Every teacher of mathematics will do well to read it.

Beginning in the August number the *London Journal of Education* has a series of excellent articles upon "Measurement and Simple Surveying an Experiment in the Teaching of Elementary Geometry."

The *Journal of Education* promises a series of ten symposia upon the most vital topics in the subject of arithmetic. Dr. A. E. Winship will write the leading articles.

The program of the Mathematical Section of the State Teachers' Association is as follows:

State House, December 26.

1. "Some suggestions on Teaching Algebra and Geometry," Milton V. Gantz, Noblesville High School. Discussion opened by D. R. Ellaberger, Richmond High School.

2. "Interpretative Devices in High School Mathematics," Edgar C. Welborne, Anderson High School. Discussion opened by Professor O. L. Kelso, State Normal.

3. "Mathematics and Progress," Professor C. A. Waldo, Purdue University. Discussion opened by Professor Robert J. Aley, Indiana University.

It is expected that a large number of the mathematical teachers of the state will be present. All who are interested in the advance of mathematics should attend and be prepared to take part in the discussion.

Professor F. L. Morris of the Chair of Mathematics in Hanover College has presented his resignation to take effect at the end of the college year. He has held the chair for twenty-five years, and retires because of advanced years.

Professor A. Jones of the Marion Normal has charge of the Mathematical Columns of the *Indiana School Journal*. He is a splendid man for the place.

Linneus Hines continues to teach the Algebra successfully in the Evansville High School.

Helen U. Sharp has the following on the table of 9's in the *American Primary Teacher:*

9× 1= 9
9× 2= 18
9× 3= 27
9× 4= 36
9× 5= 45
9× 6= 54
9× 7= 63
9× 8= 72
9× 9= 81
9×10= 90
9×11= 99
9×12=108

"First, lead them (the pupils) to see that the sum of the digits in the products is always 9 (except in 9×11 when there are two 9's). Second, let them count right down the table, the left side digits reading 0, 1, 2, 3, 4, 5, etc., increasing by 1 each line. At 9×9 turn and count 1, 2, 3, etc., back to the first. Thus the left digit increases by one each time, while the right digit decreased by one each time." This peculiarity should be noted by every pupil, and in the advanced arithmetic the pupils should see that it is a peculiarity inherent in the number system.

The answer to problem 14, page 215 Cook and Cropsey *Advanced Arithmetic* is incorrect. It should be $981.60. When teachers discover mistakes in the new arithmetics, we shall be pleased to publish them in these columns and thus save time and effort for busy teachers.

Dr. L. E. Dickson leaves an assistant professorship in the University of California to become associate professor of mathematics in the University of Texas. Dr. Dickson is favorably known through his contributions to the *Group Theory*.

DeMorgan once said, "The most worthless book of a by-gone day is a record worthy of preservation. Like a telescopic star, its obscurity may render it unavailable for most purposes; but it serves, in hands which know how to use it, to determine the places of more important bodies." He was right. Preserve the old arithmetics. See that they are placed in collections where they may best serve the public.

MUSIC.

EDITED BY

J. G. CRABBE, Ashland, Ky.

THE TEACHER OF MUSIC.

If the proper qualification of teachers is of such vital importance to the successful teaching of music in the public schools, it is well to determine what those qualifications should be. First, a teacher of music in the public schools should be a correct and artistic singer. It is not essential that his voice should have the freshness necessary to sing a solo in public, but it should be well cultivated, of good quality, and he should be able to give correct examples in tone formation, vowel building, pronunciation, phrasing, articulation, and singing for children to hear and to imitate. Particularly is this necessary for a teacher in the primary grades. A knowledge of harmony is of little consequence and the ability to play an instrument not at all necessary. Far more necessary is it that he should have sufficient knowledge of the physiology and anatomy of the vocal organs in relation to voice production, breathing, and singing, to understand the limitations of the voice and its natural tendency, and to recognize imperfections in voices resulting from diseased conditions of the throat and nose. His theoretical knowledge of the science of music should be sufficient to enable him to teach all theory necessary to independent sight-singing in all the keys, and he should be able to present this theory in a progressive, scientific manner, making all illustrations and explanations clear and concise. With this knowledge and ability, a woman is far better qualified to teach music in the primary grades than a man, because the character and quality of a woman's voice is easier for children to imitate. When the boys' voices begin to change, and they sing tenor and bass, a man who can show them how to sing these parts can make the lessons more interesting than a woman.
—*George Whelpton in School Journal.*

WHY NOT THE BEST?

Fletcher says: "Let me make the songs of a nation, and I care not who makes its laws." That a nation may produce makers of song, the spirit of music lying dormant in every child must be awakened in earliest infancy. The power to express poetic thought in song can best be developed through systematized play. Tomlins says: "What one voices in song one lives." In the finger plays of the nursery, beautifying and sanctifying the home spirit; in kindergarten games, symbolizing nature and idealizing work; in the educational games of the elementary school, where music is rightly blended with verbal speech, children are given an opportunity to voice in song what they see, hear and feel, and thus to live it. That the wholesome, elevating kind of music heard in the kindergarten be carried into the primary school is of vital importance. Too often we hear beautiful words set to street music and the lighter college airs in primary and grammar schools, and we see children marching out of their class-rooms to the sound of music that weakens and degrades their nature. The best is not too good for the future rulers of home and state. Songs and marches should be taken from the best composers. Music should always appeal to the highest and best in the child. The school should give the child an appreciation of fine music; indeed, it should stir his whole being with poetic love, patriotic fire, and religious thought—should be a means of illuminating the imagination until ideals are formed which, when fully realized, will add to the happiness of the world by expressing "sympathy and love to fellow-creatures and worship to the Creator."

ALLIE M. FELKER.
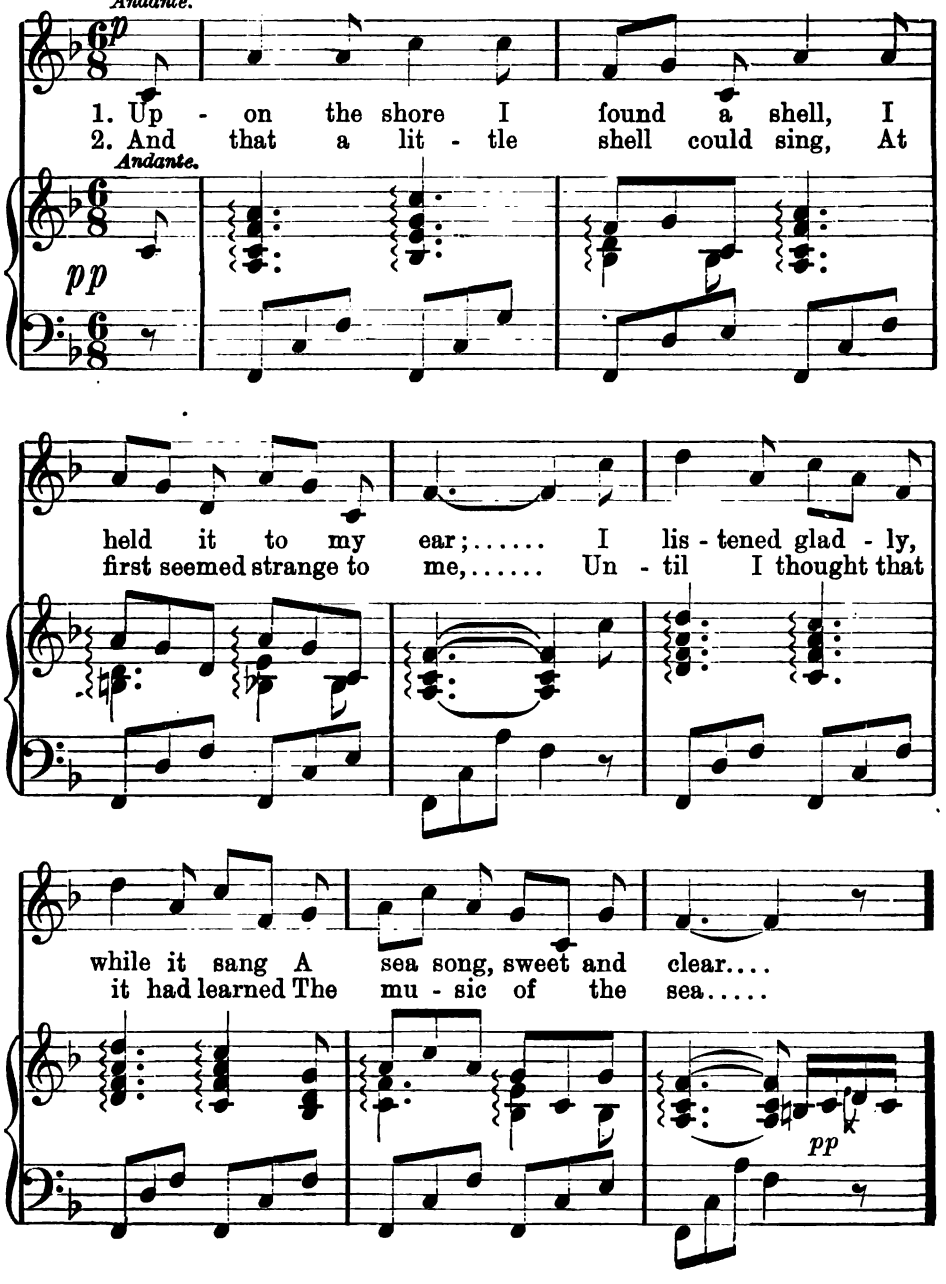
FIRST, SING.

Too much emphasis has been put upon the importance of reading music at sight. The insistence should be that children shall *sing*. The question as to whether it should be at sight, or otherwise, should be of secondary importance. Good singing is a matter of the first importance. Let the children of the schools sing good songs with interest and appreciation, then if they may read at sight, so much the better and the more valuable will their singing be. In fact, unless some vital consideration is to be sacrificed, let the singing be on the basis of sight reading *finally*, and all effort should work to this consummation. The conclusion is, sight reading should be the *climax* of effort, not the *initiative*.

—*Robert Foresman.*
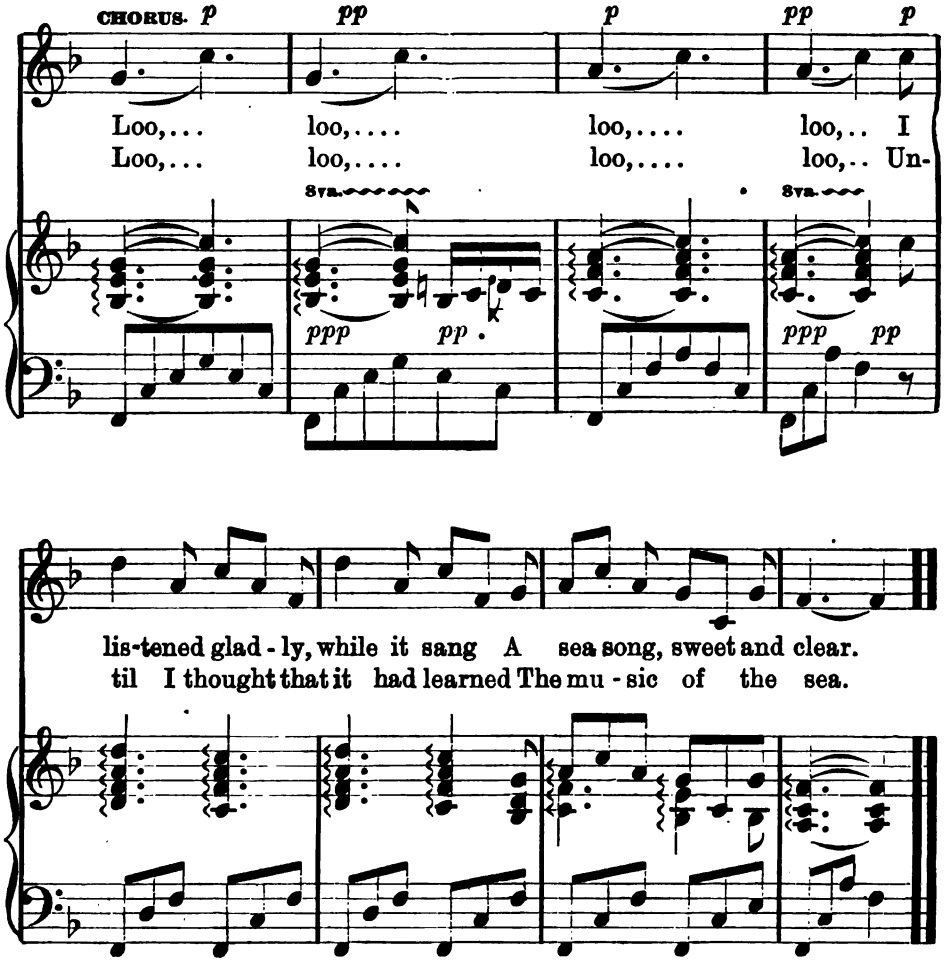
The Shell.

Rebecca B. Foresman. Julia M. Adam.



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The Shell.



3. I could but wish the song had words,
For then my little shell
The secrets of the deep blue sea
To me would surely tell.

4. For I had wondered many times
What 'twas the water said,
When it came rushing to the shore
In waves high as my head.

5. But never would the little shell
Tell anything to me;
Although it sang, fore'er it kept
The secrets of the sea.

NATURE STUDY IN THE COMMON SCHOOLS.

A TALK ABOUT WATER-DROPS.

By A. WILMER DUFF.

(Concluded from November.)

BUT we have wandered somewhat from our subject, which was the fate of the water vapor that rises from the earth. We found that rain is one way in which it comes back, but that is not the only way. You will readily think of the dew that sparkles on the grass when the sun rises after a cold, starry night. Cold has a good deal to do with the formation of dew, but you may wonder why the stars are mentioned. With a little assistance you will find for yourself the explanation of dew and the connection between it and the stars, and you will then wonder why the explanation was never thought of until less than a hundred years ago. You must all have noticed what happens when a pitcher of cold water is left standing in a hot room. The outside of the pitcher soon becomes covered with moisture, which may even gather in drops and run down the sides. This is exactly the way in which dew is formed. The surface of the ground becomes cold at night and chills the air near it, and the vapor in the air then shrinks into drops.

I am going to ask you to notice on what nights dew is most plentiful. Before going to bed find out whether the night is cloudy or clear and whether there is much wind or very little. In the morning see whether there is much dew, or little. We shall keep a record for a month, and at the end of that time you will be able to predict at night whether much dew will be seen in the morning, and you will be able to answer the question, "What have the stars to do with dew?" Take some care to notice, also, where there is most dew—on the earth, on grass, on stones or on metal articles, and whether there is more on the open grass or on grass under trees. You will also learn something interesting about the matter if you stretch a piece of muslin on four little stakes and notice how much dew is deposited under it. I must not, however, leave you with the idea that all dew comes from the air. Some part of the dew on a leaf actually comes from inside the leaf by means of small openings or pores.

But we have not yet mentioned all the ways by which vapor returns to the earth. We all know what snow is, although people who pass all their lives in the countries near the equator never see it. What is snow? Some still, cold day when the large flakes are just beginning to come down, catch some of them on the sleeve of your coat and look at them carefully. You will soon find that they are among the most beautiful things that you have ever seen. The flakes are all in the form of stars, shooting out rays on every side. Sometimes these rays are quite straight, but in many cases you will find that there are little raylets darting out from the main ray and giving it a most beautiful fern-like look. I am not going to tell you what these different snow stars are like. You can find out much more easily than I could tell you. You should draw pictures of as many as possible, and see how many different kinds of stars you can get. You will easily find half a dozen; others have found as many as a thousand. If you count the number of rays on each of the different stars you will find something very interesting about them. Perhaps the day on which you first try may not be a very good day for observing, for there may be too much wind and many stars may stick together or they may be too small. But persevere and you will find that some day you will get a good view of these snow gems.

But we have not yet answered the question, "What is snow?" Snow flakes are not frozen water-drops, for if they were they would be round like water-drops. They consist of particles of water vapor which have been caught and fixed in position by some invisible power before they united to form water-drops. This power is not merely the coldness of the air, for that could not give the snow flakes their regular shape. The star-making power is something more than mere cold or even the cohesion which we spoke of before, but we shall not at the present time attempt to explain it. If you wish to find the effect of great cold alone on water vapor, fill a tumbler with a mixture of salt and snow and observe how the vapor particles from the air are deposited on the outside, owing to the intense cold produced by the freezing mixture. What you get here is much like the hoarfrost that takes the place of dew on very cold nights, and, in fact, hoarfrost is merely frozen water vapor which did not become liquid before freezing.

Perhaps you are somewhat surprised at the statement that vapor can turn into a kind of ice, such as snow or hoarfrost, without first becoming liquid water. Yet there is no doubt about it, and it is no more surprising than the other fact that snow or ice can turn into vapor without first becoming water. For instance, when there is very cold weather for two or three days together it is often found that the snow disappears, although the weather is quite too cool for it to melt. It has simply flown away particle by particle as vapor. You may have to wait a good while before you get a chance to observe this, but there is another way of noticing the same thing. The next time that clothes are put out to dry on a very cold day notice that the clothes can dry almost completely although it was certainly too cold for the ice on them to melt into water. You may say that it has melted into vapor.

Although snow does not consist of frozen water-drops, yet we are all familiar with frozen water drops under the name of hail. These little ice balls come down sometimes in summer when the air does not seem cold enough to freeze water. But they must have been frozen somewhere before reaching the earth, and so we learn that there must be somewhere above us on a summer day places where the air is cold enough to produce ice. You can often see such a place, even on a hot summer day, if you wish. Look for a cloud that seems very high up, one that resembles hairs or feathers with their fibers curled. These clouds are sometimes called horse-tail clouds. They consist really of small pieces of ice instead of drops of water. When you see many of these clouds you may expect wind soon, or at least a change of weather. They are very high up, sometimes as much as ten miles. You must not, however, suppose that the hail actually comes from these clouds. It really is formed much nearer the surface of the earth by very cold currents of air. If the drops are first frozen into hail by cold air, and these frozen drops before reaching the earth have to pass through a thick layer of warm air, they are partly melted again, and we get what is called *sleet*.

We have said a good deal about water vapor shrinking as it is cooled until it becomes drops of water. What happens to water as it is cooled? Does it shrink? Try it for yourself in this way: Take a large glass bottle with a narrow neck. Fill it first with pretty warm water, merely to warm it up. Then pour this out and fill it with water that is nearly boiling. Tie a string around the neck just where the water stands, cork the bottle and put it where it can cool. Look at it as it cools, and notice that the level of the water falls steadily.

We thus see that water shrinks as it cools. Notice which part of the bottle is the colder and see if you can explain why. If the day is cold enough you may at last get the water down to the freezing point. You will find, however, that it does not go on shrinking right down to where it begins to freeze. A little expansion actually occurs before the freezing point is reached, but unless your bottle be very large and have a very narrow neck, you may not be able to see this. If you can get a small glass tube and pass it through the cork and then shove the cork hard into the bottle full of water you may make a very narrow neck for the bottle, and then you may be able to see this slight expansion of the water before it is quite down to the freezing point.

But what happens when the water actually begins to freeze? Leave the bottle of water out on a very cold night and see what has happened to it in the morning. You will find that the bottle has cracked, showing that when the water began to freeze it must have expanded in volume, and as the bottle couldn't expand also, the latter was shattered. So we see that while water vapor and water both shrink steadily as they cool, when water turns into ice it expands instead of shrinking, and therefore the ice must be less dense than the water. Now, any solid that is less dense than water will float on water, and so we see why ice always floats on water instead of sinking. Try this for yourself with a lump of ice and a tumbler of water. Try and judge how much of the ice is above the water and how much below. If you can judge very accurately you will find that there are about eleven times as much of it below as above.

How many different effects produced by this expansion of freezing water can you think of? There are some very important ones, indeed; but we must leave such questions as these for another time.

PURDUE UNIVERSITY.

"And so, as Tiny Tim observed,
God bless us every one!"

THE TOWNSHIP INSTITUTE.

FIFTH MEETING.

NOTE—It should be borne in mind that the outline on Organic Education is based upon Miss Scott's book by that title, published by D. C. Heath & Co., 90 cents, and the outline on Reading upon Professor Clark's *How to Teach Reading*, published by Scott, Foresman & Co., 75 cents.

ORGANIC EDUCATION.

OUTLINE.

1. Chapter VIII.
 Read as a whole.
 a. "Analysis of Character," on pages 68-69, 96, 117, 134, 135, 160, 161, 184-185, 201-202, 215-216, 228, 233, 248 250-251, 261, 272, 280, 286, 293, 302, 308.
 (1) Arrange carefully the elements of character shown in the first analysis. (Pages 68-69.)
 (2) Arrange the second in a similar way.
 (3) Decide upon the growth indicated.
 (4) Proceed as suggested under (1), (2) and (3) with the full analysis.
 (5) Test the analysis given by a reference to the grades in your own school.
 b. Consider in a similar way "The Ethical Aims," and "The Material."

COMMENT.

The direction in the outlines under chapter eight "to read the chapter as a whole" presents considerable difficulty on account of the length of the chapter, but the principle involved is very important. Only through the preliminary comprehension of the whole is one able to estimate the details in their true proportions.

Under "a" of the outline attention is called to nineteen different "analyses of character." With the first two the teacher is asked to do three things—arrange carefully the elements of character in the first analysis; arrange the second in a similar way, and decide upon the growth indicated.

Let these three things be briefly done:

(1) The elements of character at the age of five to six as shown in the first analysis (pages 68-69), arranged in order, are as follows:

1. It is the period in which the mental capacities belonging to the first stage of life are merely dawning.
2. The ruling interest is a longing to know the meaning of every fact presented, both in nature and the institutions of society.
3. The child's wanderings in space or in thought may be because of engrossment in some object and with no intention of wrong-doing.
4. At this stage the child begins to show a tendency to organization in noting the relation of the object to facts he knows and to its causes.
5. At this time the child has but little power of inhibition; hence his limbs seem to respond to every passing impulse or idea more than is desirable in furthering his development. He needs greater ability of concentration.
6. His curiosity is likely to lead him into daring exploits. It is said that he considers an adventure as a mere experiment in obtaining some new relation or fact.
7. The tendency of the child in this stage, is to apprehend whatever he is examining as one undivided whole; not distinguishing it clearly from himself and from other objects. He does not tend to analyze it into its various attributes. This is a very important educational truth. It not only characterizes the child at this period, but it is a mark of the mature thinker on his approach to a new object of thought. It is in obedience to this principle that the teacher is asked in these outlines to "read the chapter as a whole."
8. It seems that the child differentiates one object from another only as his *experiences* bring to light the differences. It is of educational significance that at the age of five and six the child tends to discover similarities rather than differences.
9. Another element in the analysis of character is this—the child becomes aware, under his strong inclination toward experiment, that he can produce for himself, therefore, he constructs rude means to accomplish his ends.

(2) The analysis of character presented on page ninety-six is supposed to mark a child of six years. The elements are as follows:

1. Curiosity is less acute than in the first stage.
2. Imagination rules the self far less completely.
3. The inventive capacity is capable of creating more complex and more highly finished productions.
4. The idea of possession is strong. As a

result the pupil is very tenacious in maintaining his own rights. He is also somewhat inclined to disregard the rights of others. This trait, however, leads to resistance on the part of others, and as a result the child begins to respect the property rights of those about him. Finally under all these influences he is induced to cooperate with others to maintain the common rights of all.

5. Through these same influences he learns obedience.
6. His knowledge of danger being more clear, he feels more fully the need of protection.
7. This renders more important to him all that the home involves. He begins to appreciate its shelter and protection. He understands and favors its cooperation. He begins to think of the duties belonging to each member of the family, especially of the duties belonging to him, himself, since he is sheltered, nourished and protected in a peculiar sense.

(3) The growth indicated seems to be one from individual contest with environment to a cooperative contest. In the stage represented by Hiawatha the child looks upon each object, himself included, as isolated. He is inclined to attempt to cope with his surroundings alone. He roughly contrives means that will aid him without turning anxiously to home and to society. At the later age he appreciates more fully the difficulty of knowledge and of behavior; he apprehends more fully the danger of his surroundings; he knows more accurately the weakness of his own efforts. This leads him to value cooperation. At such a time the pupil will readily assimilate simple lessons on the value of the home and the school and on their duties.

The child's growth into the sense of property is one aspect of the cooperation involved in society. To an individual upon a lonely island, as in the case of Robinson Crusoe, property is of no value. This lesson may very appropriately be presented at the stage of life typified by Kablu. It is the institutions of society and the cooperation they imply that give value to property.

The growth into the sense of property has two stages. The first stage in this growth is one which arouses a strong tendency to acquire more and to defend one's self in retaining that which he has. The second stage is one in which the child grows into a like feeling for the property rights of others. To this second phase of growth the teacher is to give a greater degree of attention. The first kind of growth arises almost spontaneously, the second requires the constant guidance of the home and the school.

(4) The teacher is asked in the fourth place to consider the other analyses in a way similar to that in which he has considered the analyses on pages sixty-eight and ninety-six.

(5) It is hoped that each teacher will give some test to the analyses by a study of the conditions in his own school. Among the questions he may ask: Are the pupils at about the age of six beginning to show an inclination toward cooperation? Does each child at that age tend to maintain his own rights to property in disregard of the rights of others?

Finally, let the teacher arrange carefully the elements in the "Ethical Aims" as given on page seventy and on page ninety-six. With these data at hand let him decide upon the growth that has been made. In the same way are to be considered the other statements of the "Ethical Aims." The work upon "Ethical Aims" is to be concluded by testing the thought gained by a reference to the grades in the teacher's own school. It is suggested that "The Material" be examined and tested in somewhat the same mode.

HOWARD SANDISON.

HOW TO TEACH READING IN THE PUBLIC SCHOOLS.

OUTLINE.

I. THE CENTRAL IDEA. (Page 139.)
 a. Discuss the saying, "There is only one rule for emphasis—Gumption."
 b. The best method of studying this chapter is to read aloud the various illustrations found on pp. 140 to 146, and to discuss them in the institute.

II. SUBORDINATION. (Page 149)
 a. What objections are there to telling a pupil to read words in parenthesis "lower and faster."

III. VALUES. (Page 157.)
 a. What appropriateness is there in denominating this chapter *values*?
 b. What result are we to expect from class study of *values*?

COMMENT.

In order that the central idea may be made clear to the listener it is necessary that it be be clear to the reader. Not vaguely apprehended but clearly perceived and firmly fixed in the mind. Then the phrase or sentence must be read with the definite, distinct object of impressing the thought upon the mind of the listener; and the child must recognize his responsibility to convey the thought of the author to his listeners. The teacher and pupils must cooperate to make the reading lesson a real lesson. Every-

thing should be done to assist the reader by giving him a careful, attentive hearing. Whenever he fails to impress the central idea, let us not question him regarding his emphasis, but let us rather say, "Is that what you mean?" or "We don't quite understand you, Mary," or any one of a hundred comments that will occur to every teacher.

In the great majority of cases there is little room for doubt concerning the interpretation of any given passage. The author had but one purpose in mind and the discovery of that purpose is one of the objects in the preparation of the reading lesson. It is true that occasionally there may seem to be two or more readings of a sentence, but careful study, thoughtful analysis, patient consideration of all the factors, will lead us to the true interpretations.

It is a fair question to ask to what extent a teacher shall endeavor to force his own interpretation of a passage; or, for that matter, of an entire selection, upon the class. It seems to me that such an endeavor is always to be deprecated. It is the duty of the teacher to show the class (wherever it is absolutely necessary to do so), by careful questioning and occasional information, the reasoning which has led him to any given interpretation. If, through his failure to present the proper stimulus, or through the child's incapacity to appreciate the author's conception the child cannot be led naturally to apprehend the passage, I am inclined to believe it is better pedagogy to accept an incomplete or even an incorrect interpretation than to force the child to read in a mechanical way after the model of the teacher. A clear apprehension of the meaning of a passage must underlie the reading; and all reading must be affected that is not the spontaneous expression of that apprehension.

There is no part of the teachers' work where the ability to ask suggestive questions and to encourage questions from the children is so tested as in the teaching of reading; and there is no subject wherein such splendid results are attained by that ability. The teacher should exhaust all his powers to get the interpretation from the class before even hinting at what may be the author's intention. When we bear in mind that the further the child pursues his studies the more dependent he becomes upon his ability to extract the author's thought from the printed page; to extract it definitely and correctly, we should not hesitate to employ all legitimate means, no matter how much time may be consumed, to show the child the necessity of getting the central idea and how to get it.

S. H. CLARK.

ADOLESCENCE.

OUTLINE.

THE ANTHROPOLOGICAL PHASE.

A certain solemnity has always marked this epoch among both primitive and civilized people. It has always been solemnized by religious rites, tribal ceremonies, the adoption of the "Toga virilis," by confirmation services, first communion and conversion.

According to G. Stanley Hall pubescence is the period of education. From tribal ceremonies as a basis education has developed downward to the primary and kindergarten and upward to the college and university.

CEREMONIES AMONG PRIMITIVE PEOPLE.

The ceremonies are full of suggestions which throw light upon the character of the pubescent child. The details of the ceremony vary in different parts of the world, but they all have for their purposes (1) the testing of the courage of the boys, and (2) the imparting of tribal traditions and information; they are educative. Girls are subject to similar trials.

There is seen in the boys of to-day a relic of this training period; notice tests of strength and courage, abhorrence of things effeminate and pubescent coenesthesis.

The value of these ceremonies can not be estimated, and it would seem that such things serve as a healthy stimulus to the mental, physical and religious development of the child. The boy of to-day lacks the stimulating effect of these quasi religious rites. His courage, instead of being augmented, is dissipated by modern social customs.

ATTUDE OF THE PUBESCENT CHILD TOWARD INSTITUTIONAL LIFE.

Children are born into institutional life and accept the inheritance. Does there come a time when they—at least some of them—question its value?

Statistics show that the age of incorrigibility is 14 years in girls and 15 years in boys.

There are fewer children of these two ages in Sunday-schools than of any age between 10 and 20 years.

A noticeable decrease in school attendance occurs at this age. The lives of great men show the same attitude toward school and school work. In general we may say that rebellion against constituted authority is apt to appear at this stage.

COMMENT.

In his excellent article on this subject in the first volume of the *Pedagogical Seminary*, Dr. Wm. H. Burnham says adolescence should be studied scientifically from the standpoints of physiology, anthropology, neurology and psychology, and in its ethical, social and pedagogical relations. The article contains some very helpful suggestions for the study of the subject which may be of value to the readers of THE EDUCATOR. Referring to the reports of Professor Key, who made observations upon 15,000 boys and 3,000 girls, in Swedish schools, the writer says:

The most promising subject for further study in this field is, perhaps, the relation of the marked physical changes that occur at adolescence to health and to physical and mental activity. The reports just described mentioned some remarkable cases of physical growth. In one case a boy grew in one year by careful measurement between seven and eight inches. If, in

such cases, the power to resist disease and the ability to perform physical and mental work during the years of maximum growth, were carefully noted, results of prime importance might in time appear. Another point of prime importance is the outcrop of ancestral ways. At adolescence there seems to be a great influx of hereditary strength and character. The boy of good blood who has been lazy, perverse or reckless before, often becomes serious now and develops his latent manhood. For the boy with evil hereditary tendencies it is a dangerous period. One's inheritance from the past is the anchor which holds him in the storms of adolescence, or the impulse which drives him on to perversity and sometimes to insanity. At present, however, our knowledge upon this point is very general and indefinite.

The recognition given the period in ceremonies of the savages and in civilized life and the analogy of these trials and the test that nature makes at the beginning of adolescence are discussed as follows:

The importance of this second birth has been recognized in strange and significant ways. It has been a world-wide custom to celebrate the advent of adolescence with feasts, ceremonies and mystic rites. Among savages the power unflinchingly to endure pain is the usual test of manhood. The breaking out of a tooth, the stinging of wasps and ants, tatooing with a sharp stone, bleeding, circumcision, and the like, are among the means by which the close of childhood is celebrated and by which the endurance of young manhood is tried. Even among the ancient Anglo-Saxons it is said to have been a usual test of a child's courage to place him on a sloping roof. If he held fast, he was styled "a stout, brave boy." Everywhere it is a disgrace for a boy to give expression to his pain. He who loses his self-control is likely to be killed, to be banished to the quarters of the women, or in some way to be disgraced. He who unflinchingly endures, enters into the duties and privileges of manhood. The youth's emancipation is formally announced. He belongs no longer to the family, but to the tribe. In some cases a new name is given to the adolescent, in some, ornaments are bestowed, in others a patrimony may be granted. Among civilized nations, too, the passing of "the golden gates of childhood" has often been marked by feasts and ceremonies. The Romans had their feast of the *liberalia* when boys of sixteen (in later years at the age of fifteen) assumed the *toga virilis*. And among Christian nations puberty is the period of confirmation in the church.

It is hardly fanciful to say that the cruel practices of savages are, in a crude way, analogous to the trial to which nature subjects us at the advent of adolescence. Puberty, as one writer has said, is the grand court of appeal by which weak children are weeded out, and only those who have sufficient vitality for life's battle renew their strength and continue their development; and, on the other hand, as the young savage who endures without a murmur the tortures to which he is subjected, is admitted to the rights, privileges, and possessions of manhood, so the adolescent who passes nature's ordeal then enters upon his inheritance from the past.

In regard to psychological changes the following paragraph is significant:

The psychological changes at puberty are no less remarkable. There is a great influx of new sensations. The brain, aroused by the new stimuli, increases its activity. The psychic concomitant of this increased cerebral activity is manifested in a variety of ways. The adolescent mind is filled with hopes, dreams, tempestuous passions, and new ideas. Social and ethical impulses become dominant; egoism gives place to altruism. Political or religious zeal sometimes becomes the main-spring of action. The reasoning powers come into use. At a somewhat later period philosophic speculation frequently becomes almost a passion; and philosophic and religious doubts are common. The whole period of adolescence is often one of mental storm and stress; and not unfrequently the cerebral overstrain results in insanity. This is the time for the most ardent interest in altruistic and philanthropic endeavor.

Perhaps the following circular sent out from Clark University to parents, teachers and others with the request for their cooperation in collecting data for an anthropological study of adolescence may be of practical value to our readers. Information in regard to both sexes between the ages of twelve and seventeen was indicated as desirable:

Have changes or peculiarities been noted concerning:

1. *Sleep:* duration, soundness, posture in, readiness or reluctance to retire or rise.
2. *Dreams:* starts on going to sleep, talking or muttering, nightmare.
3. *Health:* especially digestion, muscular strength and endurance, exercise.
4. *Nervousness:* neuralgias, headaches, pain in limbs or other parts, irritability or worrying about tasks.
5. *Temper:* is it modified in excitability, violence, duration?
6. *Studies:* easier or harder, more liked or disliked, changes in tastes, relations and sentiments towards instructors.
7. *Tastes in reading.*
8. *Friendships* for the same or the other sex, confidences, green or first love, cronies, society, secrets.
9. *Self-consciousness:* as shown in bearing and manner, etc.
10. *Dress* and ornament.
11. *Conscience* and moral sense.
12. *Emotional* nature, impressionability.
13. *Quality of the Will,* perseverance, independence, enterprise, aims and purposes in life's plans.
14. *Fears,* superstitions, signs, omens.
15. *Physical changes:* slower or more rapid growth, changes in looks, outcrop of ancestral ways, tricks, habits of gait, voice, inflection, gesture, taste, aptitude, etc.

The change from childhood to adult life brings a consciousness of the reality of life and the transition period is one of doubt and question-

ing. Sometimes the awakening is sudden and the shock is hard to withstand. Well it is for the child in these times if his training has been of such a nature that his character has the quality of sturdiness in it! If from the beginning parent and teacher have directed him so that all unconsciously he has taken on the capacity to meet calmly any conditions that may arise, and to solve any problems that may confront him he will find himself putting away childish things and assuming new responsibilities and duties with no jar to his nature. There are two extremes in this preparation: one overprepares and arouses the child's fears and doubts; the other is insufficient and leaves the child all at sea with no anchor. This is the period of all times when the child needs the sympathy of parents and teacher. Made timid by the changes in his physical life and perplexed by the questions that arise which he cannot answer, he withdraws within himself and suffers in secret. In this time the child needs the knowledge and sympathy that the experience of the teacher and parent can supply. Frank and open communion will save much suffering. Perhaps the question of religion has given rise to more doubts and sorrows in childlife than any other subject. The writer is inclined to the belief that much of this trouble has arisen and is yet due to the superstition that attaches to the training that children receive. Not infrequently are children wrought up to frenzy pitch and fevered excitement by problems that have no place in childhood. Unhealthy excitement creates a kind of abnormal religious fervor which having run its course leaves the child skeptical and indifferent.

Grave questions present themselves and in the first blush of childish ardor the solution is clear. Single handed he would fight for right and conquer. What he needs, then, is a calm view of the way institutional life is organized and a patient direction of his energies in proper channels. The writer remembers one boy who, in this waking time, was struggling with questions of right and wrong and death and immortality and heaven and hell, who in his doubt went to his father with his questions. He wanted to know if the great men in the world really believed in right and wrong and a hereafter. He wondered if they had not solved the problem for themselves, and though they knew there were no such things, if they had not agreed that it was the best thing for the rank and file to make them believe in such things and persuade them to live as if they were true. The writer remembers that, out of the abundance of the truth that a calm, sweet life firmly anchored in faith, supplied, the father in kindness and sympathy assured this boy that he need never doubt that the great souls of the race had believed to the laying down of their lives for the truth.

Olive Schreiner, in "The Story of An African Farm," tells of the progress of a soul through these times of doubt. She says:

"One day, a notable one, we discover the fifth chapter of Matthew, and read it all through. It is a new gold mine. They didn't know it was wicked to take your things again if some one took them, wicked to go to law, wicked to ——! We are quite breathless when we get to the house; we tell them we have discovered a chapter they never heard of; we tell them what it says. The old wise people tell us they knew all about it. . . . The ten commandments and the old 'Thou shalt' we have heard about long enough, and don't care about it; but this new law sets us on fire. We will deny ourselves. . . We conscientiously put the cracked teacup for ourselves at breakfast, and take the burnt roaster cake. . . . We are exotically virtuous. At night we are profoundly religious; even the ticking watch says, 'Eternity, eternity! hell, hell, hell!' and the silence talks of God, and the things that shall be. Occasionally, also, unpleasantly shrewd questions begin to be asked by some one, we know not who, who sits somewhere behind our shoulder. We get to know him better afterward. Now, we carry the questions to the grown-up people, and they give us answers. We are more or less satisfied for the time. . . . Then a new time comes, of which the leading feature is, that the shrewd questions are asked louder. We carry them to the grown-up people; they answer us, and we are *not* satisfied. And now between us and the dear old world of the senses the spirit-world begins to peep in, and wholly clouds it over. . . . The Bible we bear always in our breast; its pages are our food; we learn to repeat it; we weep much; for in sunshine and in shade, in the early morning or the late evening, in the field or in the house, the Devil walks with us. He comes to us a real person, copper-colored face, head a little on one side, forehead knit, asking questions. Believe me, it were better to be followed by three deadly diseases than by him. He is never silenced—without mercy. Though the drops of blood stand out on your heart he will put his question. Softly he comes up (we are only a wee bit child): 'Is it good of God to make a hell? Was it kind of him to let no one be forgiven unless Jesus Christ died?'

Then he goes off, and leaves us writhing. . . . It is nothing to him if we go quite mad with fear at our own wickedness. . . . We long to tell some one. . . . One day we try to tell some one. Then a grave head is shaken solemnly at us. We are wicked, very wicked, they say; we ought not to have such thoughts. God is good, very good. . . . So month by month, summer and winter, the old life goes on —reading, praying, weeping, praying. . . . Then a new time. A time of sleeping. . . . Then at last a new time—the time of waking. . . . And a new life begins for us."

The picture is a vivid one and not unreal. The teacup experience is a common one. A woman recently told the writer that she, as a child, in setting the table came to a time when she placed the cracked plate for herself instead of for the others and felt much better for having done so If space permitted we would quote in full the account of Waldo's sacrifice in this same book. Suffice it to say that at midday in the field he built an altar of twelve small stones upon which he laid the cold mutton-chop which he had brought for his dinner, and in the fervor of his faith offered the following prayer:

"Oh, God, my Father, I have made Thee a sacrifice. I have only two-pence, so I cannot buy a lamb. If the lambs were mine I would give Thee one; but now I have only this meat; it is my dinner-meat. Please, my Father, send fire down from heaven to burn it. Thou hast said, Whosoever shall say unto this mountain, Be thou cast into the sea, nothing doubting, it shall be done. I ask for the sake of Jesus Christ. Amen."

The faith expressed here is no larger than that of a little friend of the writer's who upon waking to a snowy morning last winter assured his father in all earnestness that the snow came in answer to his prayer the night before.

In connection with this thought the writer has been much interested in the experiences of John Stuart Mill, Mrs. Burnett, and George Sand. John Stuart Mill had his life so completely moulded by his father that he really had no childhood. Mrs. Burnett tells in detail the experiences of her girlhood, and gives an account of the first story she wrote for publication. After quoting the letter of acceptance from the editor, she says significantly: "But she (The One I Know the Best of All) had crossed the delicate, impalpable dividing line. And after that, Life itself began, and memories of her lose the meaning which attaches itself to the memories of the Mind of a Child." George Sand in the account of her childhood tells of the religion she constructed to meet her needs. Of Corambé, as she called her divinity, and his attributes we may write at another time.

F. M. STALKER.

HISTORY WORK IN THE GRADES.

By ELLWOOD W. KEMP.

SECOND GRADE.

AS I have frequently said the plan of the history work which is being developed at the present time throughout the district and grade schools of the state, is to begin with the early life of the Aryan race in India and follow it westward through the Tigris-Euphrates valley out to the eastern extremity of the Mediteranean, to see something of what Egypt did for civilization, then Greece, then Rome, then the Teuton in the middle ages, then forward, studying the Crusade, the Renaissance, printing, invention of gunpowder, the reformation, something of the government of Spain, France and England at the time of the discovery of America and then forward into the history of America. It is the plan for the first grade to deal with the early Aryan in India and for the second grade to get as clear an idea as is possible for children of this early age of the life that grew up in the Tigris-Euphrates valley amongst the old Chaldeans, Babylonians and Assyrians; of that which grew up in the Nile valley amongst the Egytians; of that which grew up just at the eastern extremity of the Mediteranean sea amongst the Jews and Phœnicians. It is not the thought to present to the children in this early grade a dry account of the names of kings and battles fought between countries, but by a method of clear and artistic description of such things and events as were most characteristic of of these several peoples to help the child to imagine the kind of life which was lived in this far-away time and place. For example, a story about how they carried on agriculture, the kind of tools they used, what kinds of grains they grew, how these grains were prepared for food, may be made of great interest and value to children. Likewise the story of their school-life in any one of these countries compared with the school-life which the child is now in, would be both profitable and interesting. A story of how they made books, how they built pyramids, how they built temples, the worship in these temples, a description of some of the most characteristic pieces of art; as, for example, the Sphinx in Egypt, or the Winged Bulls in Persia, sympathetically and intelligently presented to the children by de-

scription and picture is the type of work which is here contemplated. To make this clearer to the teachers throughout the state a story about book-making and writing is presented below, as a type of the general character of work contemplated. This story is one of many which are being worked out at the present time by the students in the state normal school preparing for grade work in history in the public schools of the state. This story was prepared by Miss Mabel Rowe, and is designed for second grade pupils.

A STORY OF BOOKS.

"Children, how many of you have ever heard a story about books? I know you have heard stories *from* books and have read stories yourselves *from* books but I don't believe you know the story *about* books.

Do you think little boys and girls, all who have ever lived, have always had books as you have; books in school and story books at home? Do you think there ever was a time when there wasn't a book in the whole world? Yes, there was a time, when there was not a book of any kind in the whole world. There has been a time when not a person could read or write or would have known a book had one been put before him.

Let us think for a few minutes about Kablu. We have tried to understand how long ago Kablu lived. Did we hear in our story of him anything about books or about his knowing how to read and write? No; for in that far-away time and far-away country they knew nothing of books, reading or writing.

How do you suppose they managed when their friends went away and left them if they could not write to them? Don't you suppose they often wished they had some way of telling them things while they were away? But it often happened that these far-away people did have a very important message or word to send to some one. How do you suppose they did it? I will tell you a story I once read: There was once upon a time a king named Darius, who wished to get another king's country all for his own.

So he took his soldiers and went to this country to have war. He had several battles and tried to make these people give up their country to him, until after awhile this other king sent him a letter. This letter was not written on paper with a pencil or a pen or a typewriter as letters nowadays are written but a man came to King Darius carrying a board on which was pinned a bird, a mouse, a frog and five arrows. Do you think you could read a letter like that? No, neither could I. This was what it meant: "Unless, O Darius, you and your soldiers can turn into birds and fly away through the air, or become mice and burrow under the ground, or be as frogs and hide in the ponds you shall never get out of this country for we shall kill you with our arrows."

This was the only kind of writing people of long ago knew how to do for years and years. But, after a while, they began to write by making pictures. They did not have slate and pencil, blackboard and crayon or paper and pen with which to draw and write, but they used wood and stone to write on.

Have you ever seen your brothers take a piece of board and carve out a doll or a boat? These carved out their writing the same way. As I said, their writing was pictures. If they had wished to send a letter like that to King Darius they would have carved out the board so that the bird, the mouse, the frog, and arrows would have been of wood and so cut that they would have stood out on top of the board. It would have been something like your embossed picture cards, or like the flowers, leaves and letters on the stoves you have seen.

To carve the writing on stone they would use something like a chisel and a hammer. Just think how long it would take them to write in this way! If they wished to say "Two kings had war" they would cut in the stone or wood two or more men facing each other holding bows and arrows. But this kind of writing was very hard to read and they did not always know when it had been read aright.

After a while a certain people called Egyptians began to think out a way to make letters out of which to make their words. Their letters were not like our a, b, c's. They were pictures. A little chick meant *u;* an eagle, *a;* an owl, *m;* a leg, *b;* a square, *p;* a cup, *k;* a lion was for *r;* a pipe, for *ā;* a snake for *t*, also a mitten for *t;* and so forth. They had no sign for *e*, *g*, *d*, or *z*.

If they wished to write a word they would do it like this: To write the word "horse" they would put down the four signs or pictures for *h-o-r-s*. (Remember they had no *e*.) After these four pictures, which spelled *horse*, they would draw the picture of a horse and then the picture of a hide, or skin from a four-footed animal.

To write the word "thirst" as they did it would take but two pictures to spell it, then after they spelled it they would draw a picture of a goat, because this word also meant goat. Then to show water was meant they drew the sign of "water," which looked like three rows of

six saw teeth, and then drew the picture of a man sitting with his hand to his mouth. This kind of writing is called *hieroglyphic* writing.

For their common everyday writing they wrote on papyrus. This papyrus was made from a reed, a rush, or a plant which grew in that country. This was pressed out flat and dried. Then they used a pen, or a quill we would call it, with which to write. The papyrus books are thought to be the oldest, and first books, ever written. We would not think they looked at all like books. But if they wanted their writing to last a long, long time, for years and years, they wrote on stone, on the door posts of the houses, on their stone monuments, and sides of their churches or temples as they called them.

When these people learned to make brick they wrote on them. After the bricks were shaped very much as our bricks are, and while they were yet wet, they wrote on them. The writing was not all over the brick but just in the center and usually told the name of the king who lived at the time the brick was made, and also some great deed he had done. After the bricks were written on they were put out in the sun to dry. But bricks made in this way did not last long so they learned to burn or bake the brick as they do in the brickyard. These bricks were then used in building their houses and temples.

A long while after this time the people in another far-away country began to use another way to write, instead of using pictures for letters and words. The letters were made out of things that looked like horseshoe nails, arrow heads or wedges. This writing was done with a stylus. The stylus was so made that when it was pressed on the clay it left a mark just as a nail or a small arrow head would if pressed in wet clay. Wedge writing, or *cuneiform* writing, it is called. These people also wrote another way, just making their letters out of straight lines.

They wrote on bricks also as did the Egyptians of whom I told you. Then, too, they wrote on tablets;—not tablets like we use in school. They were made in this way: Fine clay was taken, kneaded as your mother does bread, and moulded into shape. One side was flat, the other rounded; something the shape of a very small loaf of bread after it is baked. These tablets were only about four or five inches long and from one to two inches wide. While they were yet wet they were covered on both sides with very fine cuneiform writing. They wrote on them either with a wooden reed or a stylus. After the wet tablet was written on it was pricked full of holes and then was baked in a huge oven. The holes were made in the tablet so the steam could get out when it was baking so it would not bulge out of shape just as your mamma makes holes with a fork in the top crust of a pie before she bakes it. When the tablet was baked they put another layer of wet clay all around it and wrote the same thing they did at first and baked again. This was done so that if the outside writing was spoiled or worn off they would still have the inside writing; you see it saved the under writing to do this way. The outside layer being put on after the other had been baked it would not stick so closely and with a hammer the outside could all be chipped off without hurting the under writing at all.

They sometimes kept these very important books in large jars, which were used like our safes. Others of the tablets were buried and some were gathered together and put all around the inside walls of houses built for them. These were something like our libraries.

They also wrote on clay cylinders. These were chunks of clay about six inches long, or more, and were smoothed down so as to have six sides, just like six-sided lead-pencils you have seen, but much larger around. They began at the top and wrote just as we would, down one side and then another, until they had written on all sides. Thus they had a six-page book. These they baked and stored away just as they did the tablets.

These people did not use papyrus to write on, as it cost too much to get it from Egypt where the plant grew, so they made something called parchment for their common writing. This was made of sheep or goats' skin. Some other day I will tell you how it was made.

As soon as all these people began to use clay to write on they could make books and have many more than they could before. Clay was plentiful and could be written on so much easier than stone or wood.

How would you like to have books of that kind? Do you think they were as good as ours? Were they better than no books at all? Do you suppose we would ever have had books if these people had not made this kind?

Some other day we shall see if we can think out reasons why people work so hard to have books and of what use books are to us."

Superintendent Chas. F. Patterson of Edinburgh, Ind., who will conduct an excursion to Havana during the holiday vacation, desires to announce that the tourist rate from Indianapolis will be $91.20.

BITS OF INFORMATION IN GRAMMAR.

USES OF LOGIC IN GRAMMAR.

One need not read far in any of the formal grammars to see that the authors have divorced grammar from logic. Several of these grammars now in use in the schools of the country give the following definitions:

1. A sentence is a group of words which expresses a thought. 2. A sentence is the expression of a thought in words. The two definitions are the same in substance and both are good. 3. The subject of a sentence is that about which something is said. 4. The predicate of the sentence is that which is said of the subject.

These definitions are old. Essentially the same definitions are found in Lindley Murray's text on the subject and they are thus seen to be hoary with the frosts of over a century. This would be no objection to them, however, if they were logical or true. A truth stated an hundred years ago is as valid now as it was then, provided it is a truth and clearly stated.

But let us examine the definitions given and see if they will stand the test. If a sentence is a group of words, and I believe all agree in that, then any part of it, the subject for example, must be a word or words. The subject of a sentence must be a word or words and the predicate must be a word or words, since the entire sentence is composed of words.

If the subject of a sentence, then, is that about which something is said or affirmed, we must say or affirm something of a word or words in every sentence. It follows that we are all the time talking about or making affirmations of words. For example, when I say, "The apple is red," according to these definitions, I must mean that the words, "The apple," are red. But this would seem to be ridiculous since the words, "The apple," are actually black and not red. Nor does it seem reasonable to say that we are affirming the word, "red," of the words, "The apple."

What we need in this kind of grammar work is a little more logic and not so much form; a little more thought and not so many words. In the grammar now in use in this state the author says the sentence has two principal parts—subject and predicate. In another place, the adjective is defined as a word which modifies a noun or pronoun. Now in the sentence, "The book is large," what noun or pronoun does the adjective, "large," modify? If it modifies the noun, "book," what is the predicate of the sentence? The adjective, "large," cannot modify the word, "book," and at the same time be a principal part of the sentence. It cannot be subordinate and principal at the same time, and if it is not the predicate of the sentence why does the author call it a predicate adjective?

In another place the same author says, "The subject and the predicate may each be expressed by a single word, or by several words; as,—Bells ring. A merciful man considers his beast." If the subject and predicate are composed of words as would seem to be the case, judging by the definition of the sentence, it is difficult to see how each could be expressed by a single word, or by several words. It would be a difficult task to show that one word or words could be expressed in another word or words.

In a grammar recently issued by one high in educational circles, we find the following statement: "The verb is called the predicate of the sentence; it denotes what is asserted of the person or thing represented by the subject." Then in the sentence, "My teacher talks rapidly," what part of the sentence is the word, "rapidly"? For the same author divides the sentence into two parts—subject and predicate. If the word or verb, "talks," is the predicate, the word, "rapidly," must be a part of the subject. Again, in the sentence, "God is good," what is the use of the adjective, "good"? For according to the statement the word, or verb, "is," is is the predicate.

Why should we not think as closely, clearly and logically in grammar as we do in arithmetic or any other subject? Since grammar is to help us to use the English language accurately, why should we not begin at home and work out the subject of grammar logically and state our results in concise definitions that will hold together?

J. B. WISELY.

INDIANA TOWN AND CITY SUPERINTENDENTS.

The criticism is often made of an educational meeting that there was nothing to it but the repetition of threadbare generalities. Such a criticism is too often true, and hence it is pleasant to say that the annual meeting at Indianapolis November 9–11 was noted for some serious and definite work that is likely to count for great good to the schools of Indiana. The feature that contributed most to this success was the report of the committee on course of study, as mentioned editorially in this issue. A few quotations from the general discussion in the report will best show its purpose and point out the principles which guided the committee in its work.

"The high school must take cognizance of the

elementary school on the one hand and of the college on the other, but its primary consideration is its function as providing for a fairly defined stage of culture. . . . Subordination in organization and method to the schools above and below is too prevalent at the present time. . . . The special province of the high school is the secondary training of the individual. Secondary education is the nurture of the individual through the period of active adolescence. . . . The high school should in organization and method have its foundation in the psychology of adolescence, viewed in its larger social aspects, as well as in its narrower and individual aspects. . . . High school method is essentially comparative. The study of any subject in secondary schools by the same plan of instruction that is employed in the elementary school is wrong in principle and barren of results. There must be a vital change of method in passing from elementary to secondary instruction."

This last statement was made the subject of some questioning and of some opposition in the discussion. It was maintained that the spirit and methods suitable at one stage of the child's education would not require vital modification to suit another stage. The committee urged, however, the importance of adapting methods to the great change in the pupil's nature at this period.

"The function of the high school is twofold, disciplinary and 'selective.' The disciplinary function looks toward the development of the individual into a symmetrical manhood, so far as his nature will permit. The 'selective' function requires that the work of each pupil shall at the same time be adapted to his individual characteristics, and lead toward the sphere in life which he expects to enter." To the two functions mentioned Superintendent F. L. Jones stated that he would add a third; namely, institutional.

"The development of a path in life, or at least the opening to view of a path in life, is an important function of the high school. The primary object of the high school is the development of proper habits of thought and action. . . . The disciplinary function of the high school requires that the studies arranged for the pupil shall be so grouped as to satisfy the following conditions. They shall give exercise simultaneously to—

a (1) Thought, (2) feeling, and (3) action;

b (1) Subjective, and (2) objective thinking;

c (1) Language power, (2) deductive thinking, and (3) inductive thinking.

This means that at any time the student shall be engaged upon such group of studies as will give him exercise in proper proportion in all the above mental functions." (*There's the rub.*)

"The doctrine of the equivalence of studies involved in the maxim, 'It matters not what the pupil studies, but how he studies,' is false pedagogy. It is not true for any stage of education. Much less is it true for the high school, which engages the individual at the time in his development when he is forming his mental attitude and habits of thought. Nor is the pupil's predilection for one study as against another sufficient reason for permitting him to concentrate his time and energy upon that subject to the exclusion of others while in the high school. . . . No study should be pursued for a less time than one year. A half year is not sufficient for a profitable mastery of any high-school study. . . . The thirty-two credits required for graduation should be distributed as follows: Language, 5½ credits, Mathematics, 5½ credits, English, 7½ credits, Science, 4 credits, History, 5½ credits, Electives, 4 credits. Total, 32 credits." (Discussion seemed to favor integral rather than fractional credit-values for the various branches.)

"This committee must not be understood as recognizing the fitness of the high school student to make a rational selection of studies for himself. It is the opinion of the committee that the charge of overwork popularly lodged against the high school is not well founded. Most cases of nervous disorder and other forms of illness prevalent among high-school students are due to social dissipation and unhygienic living rather than to overwork in school. The committee recommends that teachers endeavor to cultivate a wise public sentiment with regard to the social life of students and the unhygienic condition of home and school, instead of weakening their courses of study. . . . It is the opinion that the best training for life is also the best training for college."

This opinion seemed to prevail, and the tendency to consider the needs of the larger number who do not go to college was evident. President Swain of Indiana University spoke for cooperation between high school and college. All speakers urged the need of better professional preparation. Superintendent Jones thought there was great danger of over-election. The educational value of the various subjects was considered, but it was generally agreed that the method of work was of more value than the end sought.

The work of the committee was very warmly commended, and its chairman, Professor Millis,

declared at the close of the session that the discussion had been so helpful that the committee could now write a very much better report. It was felt that the various superintendents should test the proposed course by actual use during the next year, with a hope that common ground may at last be taken upon a uniform course within broad lines.

An interesting feature of the first evening's program was a talk by Superintendent Goss on the character of the state schools in Germany. He showed in a forcible manner that *definite purpose* characterized education there. The state prepares a teacher or an official for service, and then insures the person thus prepared of a permanent place while he lives. The rewards are not usually so great as here but they are more certain. Thoroughness is a marked characteristic of all the work done. The different parts of the system are closely knit together, and are independent of politics.

The latter part of the session Friday forenoon was given up to Superintendent Speer of Chicago for a demonstration of his ratio method in number work. He attempted to show that all thinking is relation, and that the unit is the thing one thinks of. It may be a herd, or it may be one of the animals in the herd. It may be a class, or one of the members of the class, or a portion of the clothing of that member. A most interesting exhibition of work by the ratio method was given with a class of six children about eight years of age. They made calculations and gave answers that were almost startling to those who are familiar only with the old methods. To the possible objection that these processes become almost mechanical Professor Speer replied that until processes do become so, until they are as unconscious as walking we can not go on to other things, and hence can not grow.

Dr. Stanley Coulter pointed out both the tendency and the danger of attempting to do college work in the high school. Macroscopic should precede microscopic study. In scientific work the end sought is law, the method that of rigid self-elimination. Until laboratory work can be well done in this spirit it is better left undone. He suggested that with proper drill in nature-study a four-year high-school course could have (1) botany or zoology, (2) physics, (3) chemistry, (4) human body and physiology.

On the subject of history Superintendent J. A. Wood said that the work of the high schools should be extensive, rather than intensive. By the extensive work the pupil gains a knowledge of the relation of events in the progress of the race. He sees clearly cause and effect, and becomes the better prepared to assume the duties of intelligent citizenship and adjust himself to the institutional life of his time.

The session Friday evening was given up to a consideration of art in the schools. Dr. W. L. Bryan and Professor John L. Lowes were the speakers. Dr. Bryan raised the question how to make art touch the people and what the results will be if this is done. He thinks all study of art in the schools is worth while in that it cultivates artistic habits and teaches standards of judgment. The study should make us able to discriminate between good art and bad art, between false and true. To know art opens at once a large world that is closed to those who do not know it. Diffusion of a knowledge of art creates *tasks*. The reason so many seek the grosser life is because they have neither knowledge nor skill to do better things. It is our duty as teachers to encourage instruction for all in these incentives to higher life.

Professor Lowes of Hanover considered art in the schools as it relates to our national life. His address was scholarly, instructive and most interesting. He said that a nation in the highest sense is the unfolding in the world of the eternal and the divine. Unless art as taught in our schools touches the higher things it is worse than worthless. The nation must be itself, and it must express itself through itself. Behind and through this country there stands the living incarnation of an ideal. The best of what the nation is finds itself expressed in art. Why have we as yet no great national art? There must be a great art before there can be a great nation. Every country must have its epic, and it does not necessarily follow that it must be a poem. Rome had its great epic poems, but it had greater epics in the cultivation of the fertile valleys, in the straightening out of crooked roads. And all of this is a living, breathing part of her history.

Why should we not teach our children that the beauty in art lies around them? The life that a man leads when he is young he invariably transmits to the canvas when he is old. Is it only the grandeur that belongs to Greece, the glory that belongs to Rome? Have we no life of our own? All that we do must have the stamp of duty upon it. Our schools should see to it that the child should be taught to love his own national life. The greatest monuments of Europe are of the people, by the people and for the people. Why should not ours be the same? The address was an earnest call to seek for the elements of an American art in the life and nature of America.

COMMUNICATIONS.

A WORD ON "ORGANIC EDUCATION."

Editor Inland Educator:

With your kind permission I would like to encroach upon your valuable space to the extent of voicing a protest which seems to be general among experienced teachers This protest is with reference to *Organic Education*, the wellspring from which Indiana teachers are to draw their educational inspiration during the current school year. And whether the protest be well-founded or not, a discussion of it should prove valuable, since, if the point be well taken, the pernicious effect of proceeding upon a wrong theory may be avoided; if not the many teachers who think as the writer does may stand corrected, and thereby yield a more hearty support to *Organic Education*.

Not satisfied with the present congested condition of the course of study, the authors of this book "would further provide the pupil with systematic instruction in the history of civilization, sociology, literature, art and ethics." To be sure, they recognize "that the course is already overcrowded with subjects, so that the days are too short for their tasks, and both teacher and pupils are burdened beyond their strength." But this mountain of difficulty is to vanish forsooth, at the touch of the magic wand "organization."

The plan of organization which they would adopt relieves the congestion of the course of study by utterly banishing drill work as such, and devoting the time thus gained to the new studies which it is proposed to add. They would follow the bent of the child's natural interests, the three R's being only a means to that end. "Reading is no longer studied as an end in itself. The children spend no more time learning to read, but simply read for the sake of the subject-matter. The case is the same with spelling, writing, and composition." In other words, the acquisition of these subjects is made purely incidental, not to say accidental. And in the glow of prophetic fervor which follows this seeming emancipation from the thraldom of the three R's, they see the schoolhouse of the future becoming a "treasure-house of the art, literature, science and industry of the world, a laboratory of civilization, a busy cell or ganglion in the social system, a real segment of a real world."

What a glorious prospect this would be for those same overburdened teachers were they not disillusioned both by their experience and by their common sense! The irreconcilable facts, however, which seem such trifling obstacles to the theorists, would prove insurmountable to the teacher who should attempt to put such a plan into execution under actual school conditions. How similar such air-castles are to the dreams of the alchemists of the Middle Ages! But men have now found the only method of transmuting the baser metals into gold to be, not a chemical change of matter, but a physical change of form. Perhaps no better illustration could be given in this connection than the well-worn one of the increasing value of a pound of iron in the changing forms of pig iron, nails, needles or watch-springs.

Why not acknowledge the validity of the principle involved therein, just as freely in the world of mind as in that of matter? There are, of course, varying processes for making needles at greater or less cost, but none that will produce a pound of needles at the cost of a pound of nails. So, in like manner, while there are various ways, some better than others, by which school studies may be mastered, no way can be devised for their mastery by a merely incidental outlay of time and energy. Such an outlay will be rewarded by a smattering and not by a thorough knowledge of the subject-matter. "Earth gets its price for what earth gives us." The pupil will reap as he has sown, as truly here as elsewhere.

The method of study proposed in *Organic Education* is by no means a new one, nor are the arguments for or against it new. It is precisely analogous to the "natural" or "plunge-and-struggle" method of acquiring a foreign language by which a knowledge of the grammar is only incidentally acquired. Opposed to this method is the other extreme of approaching the study of a language through the study of its grammar. Language teachers have now generally agreed that a better method than either is a judicious admixture of the two. The mastery of the grammar is essential, but its study should be vitalized by contact with the language itself. Nor can the study of the grammar properly become entirely incidental until its forms have become so permanent a fixture of the student's mind that no conscious effort is required for their recall.

May not the analogy be pushed to the point of asserting that the best method of pursuing ordinary school studies is a combination of drill and incidental work? And of the two, the latter should certainly be subordinated to the former,—at least, until the technique of the subjects is thoroughly mastered. The polyglot sources of the English language render its orthography exceedingly arbitrary and difficult—so much so

that from the very nature of the case no incidental study during the few brief years of school can enable the child to spell correctly. Nor can such study, alone, give the child that mechanical mastery of the various number combinations so essential to successful work in arithmetic. Drill work, then, in spelling may safely be omitted only when the child can spell correctly all the words it has occasion to use. Drill work in arithmetic may be dispensed with only when it is able to perform quickly and accurately all the fundamental operations involved in the computations which it undertakes. And, likewise, drill in reading and writing may be left off whenever the child reads and writes with approximate correctness without directing noticeable effort to the mechanical part of the work.

Notwithstanding the fact that such drill work is tabooed by the authors of *Organic Education*, as a "stultifying routine" the conviction is slowly forcing itself upon the public mind that our schools do not produce results commensurate with their facilities because of a lack of drill work. The press, ever veering with public opinion, voices this conviction with increasing frequency. The Chicago *Inter Ocean* said recently: "To the practical every-day citizen, there seems to be an urgent demand just now for the sort of study that will insure better instruction in the three R's. A system that would insure the graduation of boys and girls who can read intelligently, write distinctly, add accurately and spell correctly, would be worth millions."

A similar sentiment is credited by the Duluth *Herald* to the San Francisco *Bulletin* which "notes that of late there has become apparent a doubt if, after all, there is a royal road to knowledge. Pupils who have skipped the spelling-book are found to be poor spellers. The eye may have grasped the word, but it failed to arrange its component parts in the relation in which the old reliable spelling-book had placed them to each other. The boy who had jumped the multiplication table was even more painfully deficient than those who had learned to read without learning to spell. When called upon to do sums off-hand, the familiarity which years of study of the multiplication table had impressed upon the mind, and had made the doing of sums a kind of intuition, was lacking."

In short, there is even now a widespread demand for a "return to the spelling-book drill, the multiplication drill, to a system that brings the pupils to close quarters with the essentials of education, no matter how hard the work." An examination of the questions proposed for the "Round Table" discussion at the annual meeting of town and city superintendents shows that this demand is not unheard by them. Is it not clear, then, that we, as teachers, may better conserve the interests of the school if, instead of following theorists in their speculations amid the stars, we listen rather to the dictates of common sense, remembering that, although there is the scriptural injunction to "try all things," we are no less enjoined to "hold fast to that which is good?"

ORVILLE C. PRATT.

DANVILLE, IND.

RESOLUTIONS ADOPTED BY THE AUDUBON SOCIETY.

"Resolved, That a committee of three be appointed by this society to assist the state superintendent of public instruction to arrange for an Indiana bird day or in the adoption of such other method as may most effectively stimulate in our school children an interest in the preservation of our native birds, and that this society pledges the superintendent the sum of fifty dollars, to be paid as premiums for papers by school children during the year 1900, on the subject of birds, on the condition that all papers so offered are to become the property of this association.

"Resolved, That the fifty dollars thus pledged shall be expended as follows, to wit:

"1. High school scholars, first premium, $15.00; high school scholars, second premium, $10.00.

"2. Grades 8, 7 and 6, first premium, $10.00; grades 8, 7 and 6, second premium, $5.00.

"3. Grades 5 and 4, first premium, $7.00; grades 5 and 4, second premium, $3.00.

"Resolved, That the awards of premiums shall be made by a committee, consisting of Messrs. A. W. Butler, George F. Bass and Mrs. M. N. McKay, and that all papers submitted for examination shall be sent to F. L. Jones, superintendent of public instruction, on or before January 1, 1901."

SUMMER TOUR TO PARIS EXPOSITION 1900.

SELECT INDIANA PARTY ORGANIZED AND ACCOMPANIED BY CHARLES F. PATTERSON OF THE INLAND EDUCATOR.

To meet the numerous inquiries which the undersigned has received in regard to a proposed trip to Paris under his conduct next year, this preliminary circular is issued, pending the preparation of a more complete and detailed itinerary. Owing to the difficulty in securing definite and satisfactory information as to steamship ac-

commodations, etc., through correspondence, a special trip to New York for that purpose was made by the writer, and as a result it is possible to make announcement of the following exceptionally favorable arrangements:

An assignment of space on the fine steamship, "City of Rome," has been secured for sailing of June 30th, and positive reservations of staterooms can now be made by those who wish to join the party. The following places will be visited in the order named on going trip:

Moville (Derry), Glasgow, Edinburg, Melrose, Durham, York and London, where a stop of four or five days will be made. Thence via Dover to Ostend, Brussels and Paris. After a week in Paris the return trip will be made via Calais, Dover and Canterbury to London; thence after a visit to Windsor, Oxford, Stratford-on-Avon, and Warwick Castle, to Chester, Glasgow and homeward, arriving in New York, Monday, August 6th. The trip will thus occupy thirty-eight days, and the cost for the round trip from New York will be $260.00 to $278.00 according to location of steamship accommodations. This will include first cabin berth, and, in Europe, railroad fare between points specified, and two hearty meals a day, consisting of a meat breakfast and a table d'hote dinner. Carriage drives at Glasgow, Edinburg, London, Paris, Versailles, and a coaching trip through some of the finest scenery in England, admission to the Exposition, and all necessary expenses except those of a personal nature, such as laundry bills, private wines, etc. It also includes the services of experienced conductors who will take charge of all details and relieve the party from the trouble incident to travel and the unnecessary demands for petty expenses which so greatly mar the pleasure and consume the time of the individual traveler.

The party will be limited to seventy-five persons and care will be taken to keep the membership above criticism, as it is hoped to make this trip as enjoyable socially as our very successful excursions in the past, which agreeable companinship has done so much to render delightful.

There is a great pressure for accommodations on all desirable boats, and it is really a matter of the first importance that an early selection of berths be made. Outside staterooms accommodate three persons, inside, two persons. Do not wait for circulars, but write for further details which will be promptly furnished.

Very truly yours,

CHARLES F. PATTERSON,

Room No. 132 Commercial Club Building,
Or Edinburg, Indiana. Indianapolis, Ind.

INDIANA TEACHERS' ASSOCIATION.

The forty-sixth annual session of the Indiana State Teachers' Association will be held in the State House, Indianapolis, Ind., December 26, 27, 28 and 29, 1899. Admission to all sessions will be by card which may be obtained from the permanent secretary, good for the entire week.

GENERAL ANNOUNCEMENT.

1. *Place of Meeting.*—The general association, and all the sections will meet in the State House.

2. *Headquarters.*—The headquarters of the association will be at the Grand hotel. Executive Committee headquarters, rooms 2 and 3. The Grand hotel will give a rate of $2.00 per day to members or the association, where two or more persons occupy the same room.

3. *Hotels.*—The other hotels will give the usual reductions to members of the association.

4. *Fees.*—The initiation fee is one dollar for men and fifty cents for women. The annual fee for members is fifty cents.

Excursion Rates.—All persons who wish to take advantage of the excursion rates must secure a certificate from their home agents. Read the instructions of the railroad secretary.

OFFICERS.

W. H. Glascock, President, Bloomington.

Geo. R. Wilson, Chairman Executive Committee, Jasper.

J. R. Hart, Permanent Secretary and Treasurer, Lebanon.

Emma B. Sheally, Recording Secretary, Delphi.

Vice-Presidents: E. G. Bauman, Mt. Vernon; D. S. Kelley, Jeffersonville; J. C. Gregg, Brazil; Miss L. M. Foster, Edinburg; G. W. Gayler, H. D. Shideler, Huntington; W. Clem, South Bend.

Executive Committee: George R. Wilson, Chairman, Jasper; Robt. J. Aley, Bloomington; J. R. Houston, Aurora; E. P. Trueblood, Richmond; W. R. Snyder, Muncie; Ellis H. Drake, Kentland; E. A. Schultze, Ft. Wayne; W. S. Almond, ex-officio, Delphi.

PROGRAM OF GENERAL ASSOCIATION.

(House of Representatives, Room 55)

TUESDAY, DEC. 26, 8 P. M.

Invocation.
Music.—Music Section.
Address of retiring president . . F. M. Stalker, Terre Haute.
Inaugural Address.—"Art in Education," W. H. Glascock, Bloomington
Music.—Music section.
Appointment of committees, and miscellaneous business.

WEDNESDAY, DEC 27, 9 A. M.

Invocation.

Soprano Solo.—"O Salutaris Hostia," Ganss, ... Mrs. Belle McLeod Smith.
Violin Obligato.—Miss Beradine Smith.
1. Some of the Social Aspects of Education.—Rev F. E. Dewhurst, Pastor of Plymouth Church.
Discussion.—David K. Goss, Indianapolis.
J. F. Brown, Earlham College, Richmond.
J. D. Forrest, Indianapolis.
2. "The Relation of Society to the School." Mrs. May Wright Sewall.
Girls' Classical School, Indianapolis.

2 P. M.

Music.—Music section.
"The Management of Children During Early Adolescence," A. H. Yoder, Vincennes University
Discussion.—Louis Sherman Davis, Bloomington.
Sanford Bell, Bloomington.
Paper.—"Manual Training" Chas. E. Emerich, Indianapolis
Discussion.—W. E. Stone, Purdue University.
T. J. Charlton, Plainfield.
J. W. Hamilton, Monticello.

8 P. M.

Music.—Association Quartette: L. M. Tilson, second base; W. J. Stabler, first bass; W. E. M. Browne, second tenor; W. H. Lebo, first tenor.
Announcements.
Music.—Association Quartette.
Annual address.—John L. Griffiths, Indianapolis.
Music.—Association Quartette.
Admission to the evening session will be by card, which may be obtained from the permanent secretary.

THURSDAY, DEC. 28TH, 9 A. M.

Invocation.
Music.
"Scholastic Phase of Education" D. K. Goss, Indianapolis
Discussion.—Edwin S Monroe, Mt. Vernon.
W. H. Sanders, Rensselaer.
"How can we interest the people and bring about a more thorough and systematic, and comprehensive study of the History of Indiana?" J. W. Carr, Anderson
Discussion.—C. W. Hodgin, Richmond.
R A. Ogg, Kokomo.
J. A. Woodburn, Bloomington.
Music.—Music section.
Report of committees.
Miscellaneous business.

The various departments will hold meetings as usual, and a glance at the advance programs shows that elaborate preparations have been made for profitable discussions. The full program would occupy several pages in THE EDUCATOR, and since programs will be freely distributed at the meetings it is thought sufficient here to vouch for the general excellence.

RAILROAD ARRANGEMENTS.

LEBANON, IND., NOV. 17, 1899.

Superintendent George R. Wilson, Jasper, Ind.:

DEAR SIR:—The following are the instructions of the Railroad Secretary:

1. Buy a ticket from your home to Indianapolis and get a certificate from your local agent. If he has no certificates, get a receipt for one full fare to Indianapolis.

2. See that your agent stamps the certificate, or receipt, signs it, and has you to sign it in his presence.

3. Get your receipt, or certificate some time before 9 P. M. on Thursday, (pay your dues or initiation fee) and your certificate will be properly signed and vised by the special agent of the Central Passenger Association. This will entitle you to a one-third fare in returning to your home over the same route by which you came.

4. The special agent of the Central Passenger Association will be present two days—Wednesday and Thursday, the 27th and 28th of December. Present your certificate some time during these two days.

Respectfully,
JAMES R. HART, R. R. Sec'y.

AMONG THE NEW BOOKS.

A young Englishman of noble birth about to come into possession of his title and his fortune, a German count who is cousin to the emperor, a beautiful and talented young woman who sings in concert and whose independence in going about alone is at once her strength and her danger, a rare German scholar whose accomplishments and ability win for him the title of Philosopher, a king who rules one of the petty German states before the days of Bismarck and Von Moltke, a worldly woman at court as companion to the queen, make up the chief dramatis personæ of *Young April*, a new novel by Egerton Castle. The title is intended to suggest the month of frolic and folly in which the young Englishman indulged just before he became of age. Breaking away from the restraints of his tutor he sets out to see the world as the Duke of Rochester, and meets the other persons mentioned. None of the characters can be called tame, and the movement of the story proceeds with dash and vigor. The author finds time, however, for some fine descriptions, and for an occasional bit of moralizing; such as, "Philosophy applies best to other people; for after all, the philosopher, like the Jew, will bleed, if you prick him." [The Macmillan Co., cloth, 12 mo, $1.50.]

A text-book that combines composition, story-telling and spelling is the idea upon which Elizabeth H. Spalding and Frank R. Moore have based *The Language Speller*. It is correlation with spelling as a center. The formation and growth of words are so presented as to increase interest in them and at the same time to aid in

an intelligent selection. Other points, such as letter writing, punctuation and capitalization, are interwoven. The book is adapted to work in the fourth grade. [The H. P. Smith Publishing Co., New York, 120 pp., 20 cents.]

With a conviction that a study of Latin should be based at the beginning upon a full understanding of fundamentals in form and syntax, Professor Benjamin Mitchell of central high-school, Philadelphia, has prepared *The Essentials of Latin*, designed to aid such an understanding. The feature that distinguishes this book from others of its kind is the special attention that is paid to the analysis of forms. It is held that principles are better than rules, that a knowledge of structure pays better than memorizing, and leads in the end to a more thorough mastery of the paradigms. The early exercises in translation are chosen with reference to their actual interest. The selections are from Cæsar, Nepos and Eutropius. [Eldredge & Bro., Philadelphia, 276+XLIII pages, $1.00.]

The close relations that have come about between our government and a large number of Spanish-speaking people has created a demand, that is likely to last, for the study of the Spanish language. To this demand the publishers are responding with suitable texts. Two small volumes that have come to our table are a three-act comedy entitled *El Si de Las Niñas*, (111 pages, 50 cents) and an episode from "Don Quixote" entitled *El Cautivo*, (121 pages, 50 cents.) Both volumes are edited by Eduardo Tolra y Fornés, and both are supplied with a biographical sketch of the author and with notes. The comedy is described as a model of tenderness and simplicity. The extract from "Don Quixote" includes chapters thirty-nine, forty, and forty-one of Cervantes's great work. This volume will be especially acceptable to students who are familiar with English translations and desire to read some of the work in the original Spanish. [D. Appleton & Co.]

"When chapels are churches," says Henry S. Pancoast in a preface to a volume of *Standard English Poems* which he has recently selected and edited,—"When chapels are churches, and poor men's cottages princes' palaces, every school and every household will be furnished with an adequate library." Meanwhile, until the literary millenium comes, it is well that provision of the best is made for the enjoyment and the enlightenment of all. Students and teachers may look far before they find a better selection of representative English poems than is here found. The whole range is covered, from *Chevy Chase* to the *Recessional*, and the chronological arrangement will offer some advantage. To gain access to the collection the compiler required of a poem that it must have intrinsic interest or beauty, and an independent value to illustrate the history of English poetry or some poetic form. Nearly 600 pages are devoted to selections, and 160 pages to comments and notes. [Henry Holt & Co.]

The Speer arithmetics are no longer new to teachers. It is well understood that they are constructed on the theory that the comparison of magnitudes is the basis of all arithmetical operations. In the primary book for teachers and the elementary book for pupils, the relations of magnitudes have been fundamental. Ratios were developed by sense-training, and even in the present volume, *Advanced Arithmetic*, ratio continues as the basis of constant analysis and synthesis. The aim is to encourage mental self-activity through this continuous comparing, and, as the author states it, "to aid the teacher in making conditions favorable for the contact of the learner with mathematical realities." In all this he recognizes the importance of regular, steady progress, dependent upon self-activity and resulting in growth. Needless repetitions and formal analyses are happily discarded. The ratio system makes rules unnecessary, and, by unifying all parts of arithmetic, removes the lines which have separated one part from another. [Ginn & Co., for introduction, 50 cents.]

"The essential part of rhetoric is that we shall *act*, that we shall acquire skill in the acquisition of the principles we study, in the practice of the art we are learning." This sentence, found in chapter I of Professor G. R. Carpenter's *Elements of Rhetoric and Composition* expresses what seems to be the central purpose in his book. He recognizes thought as the basis of expression, and regards the clear expression of thought "largely a question of habit, based at first on intelligent direction." The various subjects, usage, sentence structure, vocabulary and choice of words, paragraphs, and the qualities of clearness and force are treated simply and directly. It is a pleasure to note that the author would require the same course for pupils who will go to college and those who will not. The book is designed for the second year of the high school course and is to be followed by volume II for the third year. [The Macmillan Co., 254 pages, 60 cents.]

Of the numerous remarkable experiments in education that were made during the seventeenth and eighteenth centuries in Europe one of the interesting ones was that at Port Royal. The vigorous character of the men who were identified with it, the opposition that the movement met because of theological disputes, and particularly the pedagogical theories advanced and practiced, combine to make it worthy of study to-day. The art of management, the training of mind and heart, and the proper aim of education, itself, became the care of disinterested and devoted persons. Under the editorship of Felix Cadet we have *Port Royal Education*, a sketch of its history with extracts from its leading authors. Among these are Saint-Cyran, Lancelot, Fontaine, Nicole, Arnaud, Guyot and others. In the 400 pages one finds many principles which are being emphasized as important to-day. As a piece of educational history the book is both interesting and valuable. [C. W. Bardeen, Syracuse, $1.50.]

Under the title of *Lessons in Written Arithmetic* W. W. Earnest of the normal school at Bushnell, Illinois, has prepared a series of lessons for students of normal and high schools. The old methods of introducing a subject by a model solution is followed, though the author believes that the problems for practice are sufficiently varied to require the exercise of original thought on the part of the student. There is quite a large amount of general information pertaining more or less directly to the subjects under consideration. The book evidently expresses the author's own methods of presenting the subject to his classes. It is published by the author.

There are times when the particular knowledge that one desires regarding a period or a people is a knowledge of its chronology. At such times a book of easy reference is of great value. *Important Events*, compiled by Geo. W. Powers, is a book of dates for the world. In order that each series of events named may suggest the thread of history each nation is treated by itself, nearly ninety being considered in all. The events that have occurred in our own history are given most fully. There are a few notable omissions, and the use of the volume would have been somewhat easier with a table of contents naming the countries treated. However, there is an excellent index. The compiler assures us that his work has been carefully verified and may be considered reliable. [T. Y. Crowell & Co., New York, 321 pages, 18 mo, 50 cents.]

When Messrs. T. Y. Crowell & Co. began the publication of their "What is Worth While Series" they offered an easy solution for the vexing problem of making presents. Every number of the series, reaching now about a hundred volumes, sets a literary gem—a beautiful, inspiring or helpful thought—in a rich and dainty binding, at the moderate cost of thirty-five cents. Quite a number of the series are of special interest to teachers. *Opportunities for Culture*, by Jeannette M. Dougherty, shows how men and women even in remote places and with limited means may be neglecting opportunities which lie at hand. *Rational Education for Girls*, by Elizabeth Hutchinson Murdock, is a serious inquiry if the education now afforded for women is really for the highest advantage of their sex. All interested in this question, especially teachers, and parents who have daughters to send to college, should read this sympathetic study, which inclines to the belief that woman should be reared according to her nature, and not in imitation of men. *The Choice of a College for a Boy*, by President Chas. F. Thwing, discusses the comparative merits of a college in being rural or urban, denominational or unsectarian, large or small, eastern or western, Dr. Thwing has given close study to all phases of college work and life, hence his discussion will be both interesting and helpful. *The Trend of the Century*, by President Seth Low, is another discussion by an authority. The writer points out the dominance of the scientific and democratic spirits, calls attention to the wonderful progress in commerce, industry, invention and politics, and calls for persistent education to meet the demands of the new century.

Professor S. M. Macvane of Harvard university gives us a translation of *A Political History of Europe since 1814*, by Charles Seignobos of the university of Paris. The translator justifies the American edition by saying that the work merits a larger use among people of English speech than it is likely to receive in the original French. The most casual examination of the book will confirm Professor Macvanes estimate. In fact one can hardly overestimate the value, to the general student or reader, of a single volume that presents in logical arrangement, with an authenticity that is beyond question, and with clear philosophic insight, the forces, policies and influences that have controlled European history since the adjustment which followed the fall of Napoleon. The author has clearly recognized the necessities in such an undertaking and has confined himself to the indispensable, renouncing

argument, discussion, character-sketches and anecdotes. Even in recording the organization of nations, governments, parties, and of social and economic theories he has sought chiefly to explain phenomena and point out conclusions. In plan the treatment is based, in part I upon domestic political history of the states, following a geographical order; in part II political phenomena are grouped according to the logical order; in part III the order is chronological, facts being presented by periods. Each of the thirty-eight chapters is followed by a bibliography, and the volume is furnished with a very full index. [Henry Holt & Co., 881 pages, 8vo, $3.00.]

"There is no other kindergarten literature that is quite equal in value to the contents of the present volume." Such is the estimate that Dr. W. T. Harris places upon Froebel's *Education by Development*, a new volume in the "International Education Series." It is not so much the plays and games that Froebel here presents as the educational principles which underlie these. The translator, Josephine Jarvis, has condensed into fifteen pages an analysis of the contents including "The Spirit of Education by Development," "Man a Creative Being," "Paper Folding," "Stick Laying," "Principles of Education," "The Children's Garden," "Plan for Training School," "The Connecting School," and "Means of Employment." One feature of the book that gives it value is the recurrence in different connections of foundation principles. Over and over we find repeated the thought that human nature is three-fold, and that education means the bringing of each part to fullness—*vollkommen*. To follow this master who comprehended so well the nature of the child and the essentials of education, as he explains the processes of development, is really stimulating. We feel like disciples sitting at his feet as he says "The whole life of man and humanity is a life of education." [D. Appleton & Co., 347 pages, $1.50.]

A book that will be of large interest to teachers whether they may or may not be familiar with the history of education is an outline of the history of *Educational Theories in England*, by H. T. Mark. The writer finds that progress in education is quite closely parallel with progress in literature, and in support of this proposition he quotes largely from English authors. The course of development from the Middle Ages to and through the Renaissance is particularly interesting. Physical, Intellectual, Practical or Technical, and Moral are the subjects under which the various phases of education are considered. [C. W. Bardeen, Syracuse, $1.25.]

A sympathetic talk by Ralph Waldo Trine has the title *Every Living Creature*. It is a plea on the one side for kindness to animals, and on the other for the heart-training that comes through the cultivation of such kindness. Vivisection, dock-tailing, the killing of birds for decoration, and even flesh-eating come in for a share of condemnation. The cover is in green and gold. [T. Y. Crowell & Co., 35 cents.]

It is not unusual to find persons quite well read in Shakespeare who have no acquaintance at all with his minor poems. Indeed to the great mass of readers he is the dramatist, playwright, actor—nothing more. The group of poems standing in the back part of the average edition of his works seems like a sort of appendix, overshadowed or eclipsed by the greater beauty and more vital interest of the dramas. This alone, if there were no other consideration, justifies an edition of *Shakespear's Poems* in the "Standard Library" series. This is an excellent edition, including besides the text—*Venus and Adonis*, *The Rape of Lucrece*, Sonnets, and *A Lover's Complaint*—an introduction of 140 pages, and almost as much space devoted to explanatory notes, and to comment on structure, dates, etc. The very full introduction includes about all of the extant authentic history of the great dramatist, and a good deal of critical study of the poems here presented. The volume is edited by George Wyndham, and the "Standard Library" is so well known that commendation of books in this series is superfluous. [T. Y. Crowell & Co., $1.00.]

What Boswell was to Johnson, that Richard Milward was to John Selden, with the distinction that the latter never intended to have the notes taken by his amanuensis published, and, indeed, never knew that they were published. To Robert Waters, who edits the present volume of *John Selden and His Table-Talk*, we are indebted for an extended sketch of that period in the history of English literature when ana, or collections of notable sayings, anecdotes, etc., were an important feature. This was followed in turn by the novel, the popularity of which so eclipsed the older forms that most of them are now rare. The compiler writes also an interesting biography of Selden. The "Table-Talk" consists of bits of philosophy, humor, moralising, and so forth, all expressed in a style that is

quaint and incisive. Dr. Johnson himself, "talking with Boswell about French Literature, said: 'Their ana are good; but we have one book of that kind better than any of them, Selden's *Table-Talk*.'" [Eaton & Mains, New York, 251 pages, $1.00.]

An edition of *Clough's Poetical Works*, complete, with an excellent memoir, will be a welcome announcement both to those who are already familiar with his work and to the great majority who know this rare writer only in a vague and general way. Of the man himself his biographer says "His was a character not easy to describe, whose charm was so personal that it seems to evaporate when translated into words. He was a singular combination of enthusiasm and calmness, of thoughtfulness and imagination, of speech and silence, of seriousness and humor." It will be remembered that Clough came under the influences of the tractarian movement, and his successive doubts and hopes are plainly read in his poems. This, however, lends an added interest to the work of a poet who should be better known in America, and who, though not popular in the sense that Tennyson and Lowell are, was none the less a genius and will always be sure of a select audience. The present edition is admirable in every way. [T. Y. Crowell & Co., New York, 396 pages, $1.]

A little book on composition that will be welcomed by many teachers, and that will even be enjoyed by students when they find what it does for them, is *A First Manual of Composition* by Edwin Herbert Lewis. The book is planned as a connecting link between grammar on the one side and formal rhetoric on the other, and will find its place in the eighth and ninth grades. Two important features are, first, a system of sentence analysis which will enable the pupil to apply the principles of grammatical structure to his own writing, and second, the requiring of pupils to criticise and revise their own work. The latter is an innovation that seems vastly better than the old method. "At all events, lecturing and exhortation will never do for the pupil what his own progressive revision will." [The Macmillan Co., 236 pages, 60 cents.]

Even teachers are concerned, more or less directly, in good housekeeping, and will therefore be interested in the announcement of a little volume entitled *The Expert Cleaner*. As the sub-title explains, it is a handbook of practical information for all who like clean homes, tidy apparel, wholesome food, and healthful surroundings. There are bits of information and recipes which singly would be worth the price of the book. The important thing is to have the knowledge at hand and easily available when needed. The writer of this book, Hervey J. Seaman, has suggestions regarding the care and conduct of every department of the housekeeper's work. [Funk and Wagnalls Co., 18 mo, flexible cloth, 283 pages. 75 cents.]

Something new and fine in the Riverside Series was commenced in October with the publication of *Raphael*, by Estelle M. Hurll. It is a collection of pictures by that famous artist, with interpretations by the author. The numbers of this series, known as the art series, are to appear quarterly, and judging from this opening number each will be devoted to a brief study of an artist and his work. Sixteen of Raphael's pictures, including the Madonna of the Chair, St. Catherine, St. Cecilia, the Transfiguration, Parnassus, and the Sistine Madonna, are found in number I. The large present interest in pictures for school decoration makes this enterprise most timely. [Houghton Mifflin & Co., 94 pages. 30 cents.]

It will be true, generally, that practice and experience are worth vastly more than untried theory. The principle holds true in teaching as well as elsewhere, and though the real teacher understands that she must adapt rather than adopt, yet we all like to know what others are actually doing. Hence, teachers will be interested in *A Study of the Kindergarten Problem*, prepared by the city superintendent, kindergartners and others, and recording the work of the public kindergartens of Santa Barbara, California, for the year 1898-99. The methods used in physical culture, language, story-telling, drawing, clay, music, etc., are described in concrete form and will be of great interest to kindergartners and mothers. [Santa Barbara Kindergarten Association, 50 cents.]

As a text-book for normal school classes, or as a hand book for teachers who desire to study principles as a basis for correct methods of teaching, *A Manual of Pedagogics* by Daniel Putnam is heartily recommended. The special value of this volume is that its discussions lie easily within the comprehension of teachers who have had no professional training. It is a simple presentation of the elements of psychology and a successful attempt to show the place and value of that science in the art of teaching. Fundamentals are developed and discussed, defined

and applied. The arrangement of the various subjects under clearly printed heads and sub heads reduces the study to a well analyzed scheme. Presentation and application follow each other in regular order. Among the chapter heads are "Definition of Education," "Study of the Child," "Elements of Psychology," "Laws of Teaching," "Attention and Interest," "The Teacher," "Selection and Arrangement of Studies." [Silver, Burdett & Co., 330 pages.]

The very things that we are talking about these days, that we are calling basal elements in a true system of education, are centuries old, and not recent discoveries as we are sometimes led to believe. In the sixteenth century Montaigne, for example kept saying "The useful is less lovable than the honorable," "What can not be done by reason, prudence, and tact is never to be attempted by force." "That education is vain which makes us learned, but not good and wise." "In the state all depends upon the nurture and bringing-up of the children." "I would paint the school with pictures, joy and gladness, Flora and the Graces." Teachers will find a delightful collection of extracts from the essays of this celebrated Frenchman in volume 46 of the International Educational Series, *Montaigne on the Education of Children.* These have been selected, translated and annotated by L. E. Rector. The volume contains the usual helpful preface by Dr. W. T. Harris, editor of the series. [D. Appleton & Co., 191 pages, $1.00.]

Among the large and happily growing body of supplementary reading, teachers do well to remember "Appleton's Home Reading Books." As the name suggests, these books are particularly designed to be drawn from school libraries by the pupils to encourage home reading. The series bears the endorsement of Hon. W. T. Harris as editor, and in his introduction he gives some practical hints as to the value and scope of supplemental work, and the best plan for using the books of this series. Four late numbers are the following:—*Harold's Quests* by John W. Troeger. (202 pages, 50 cents.) This is a boy's book, for increasing his interest in things out of doors. The first section is devoted to insects, the next to the forest, suggesting observation of trees and animals, the next to the soil, with others on air, heat, light, magnetism, etc. It is worth a ton of yellow-backed literature, and happy is the boy who early learns to *see* the things of nature all around him. *The Insect World* by Clarence M. Weed (210 pages, 60 cents) would naturally and easily follow Mr. Troeger's book. The distinctive feature of this study of insects is that the little treatise on each is compiled from some other author, so that some twenty-five writers are represented. *The Story of the Fishes*, by James Newton Baskett, (297 pages, 65 cents) is an interesting study of the fish world, told in popular style, and adapted to pupils any where from the seventh to the twelfth grade. *About the Weather*, by Mark W. Harrington, (246 pages, 60 cents) is by no means the least interesting of the four here named. To say that a science of so capricious an element as the weather is possible would have been ridiculed a few years ago. A series of careful observations and records has made a science possible, and has enabled us through intelligent forecasts to make our knowledge of much practical value. Methods of observation and the conclusions to be drawn are here described in a clear and interesting manner. All the above books are amply illustrated. [D. Appleton & Co.]

There are few figures in English literature more picturesque than that of Walter Savage Landor. Large, independent and self-sufficient, abounding and yet circumscribed, uncompromising but perverse, strikingly original, with some of Lamb's sweetness, some of Ruskin's richness, some of Milton's pomp, some of Carlyle's ruggedness, greater than the great mass of English writers, and just less than the greatest, he occupies a place that is unique. In a volume entitled *Selections from Landor* Professor A. G Newcomer writes a very appreciative introduction that is both biographical and critical, and edits with notes seventeen selections from "Imaginary Conversations." [Henry Holt & Co., 166 pages, 50 cents.]

Remembering how large a place *expression* has in a sound scheme of education, it will be evident that the laboratory student of biology finds large use for whatever sketching ability he may have. The design of *Hints on Drawing*, by Dr. Albert Schneider, is to prepare students to express on paper, accurately, the results of their observations. The value of such training is at once apparent. Proper attention is given not only to materials and to the actual work of drawing, but there are some excellent suggestions upon observation itself and the use of a microscope. [G. P. Englehard & Co., Chicago, 60 pages, cloth, 50 cents.]

Science is coming to show that states of matter are only relative. Permanent gases, so-

called, are found to be "permanent" only under certain conditions of temperature and pressure. Late discoveries will insure interest in a volume by W. L. Hardin, Ph. D., on the subject of the *Liquefaction of Gases*. In tracing the development of the methods employed in this particular field of research history and theory have been so combined that the review will be of interest both to the scientist and to the popular reader. The treatment embraces (1) earlier observations on compression (2) the experiments of Faraday, (3) the experiments of Andrews and Van der Waals, (4) the work of Cailletet, Pictet and others, up to the present time. [The Macmillan Co., 250 pages, $1.50.]

"A story of school, football and golf" forms the explanatory title of "*The Half-Back*" by Ralph Henry Barbour. The scene of the story is divided between an academy at Hilton, New York, and a college named Harwell—an evident fiction for Harvard. Interest centers in Joel March, the half-back, who hails from Maine, is a poor boy, a good student, and a splendid athlete. How he wins a prize for excellent scholarship, becomes involved in a piece of mischief, and is exonerated just in time to take part in the great game of the year are events of sufficient interest to lead the reader on without effort. The story would be complete with the close of Ralph's career at the academy, but those who have learned to admire his combined excellence as both student and athlete are glad to go with him through college, where he wins a place upon a 'varsity team and distinguishes himself in a great game. The book sets before boys the right ideal in placing duty first, while at the same time showing the pleasures and benefits of school sports. [D. Appleton & Co., 12 mo., illustrated, cloth, $1.25.]

Readers of *Tommy-Anne* will be glad to hear that Mrs. Wright has written its sequel which she calls *Wabeno, the Magician*. The magical spectacles still do wonderful things for Anne, showing her almost everything she wishes to know about her friends the birds, the fishes, the animals, the bugs, the coal, the winds, the waves and the moon. But some of the questions are so hard that even these friends themselves can not answer, and then Anne goes to "Wabeno," who knows it all. "Waddles" her dog, is a trusty companion, and since he, too, can talk he helps Anne see and learn a great deal that she would otherwise have missed. There is enough of fiction and fable about the book to make it intensely interesting to even little children, and so much information about nature as to make it valuable for them. The illustrations are numerous and attractive. [The Macmillan Co., 346 pages, $1.50.]

The reading public has decided that in *The Gentleman from Indiana*, Mr. Booth Tarkington has written a very clever story. If some of his critics near home have carped at the picture of Indiana whitecaps, which the author has incidentally drawn, it is no more than has happened to other books, and, no doubt, to their increased popularity. The influence that a cultured and brilliant young man exerts as the editor of a small paper in a remote Indiana town, the part taken by a business manager who was at first dissipated and then reformed, a typical family feud among Virginians who moved to Indiana, and a very remarkable young woman, as talented as she is beautiful, furnish the main elements in a romance that is both entertaining and artistic. [Doubleday & McClure Co. $1.50.]

If the word nugget carries with it the idea of something rich in value, free from dross and compact in form, then the group of little books called the "Nuggets" series is well named. One of the series called *Educational Nuggets* is made up chiefly of selections from Plato, Aristotle, Rousseau, Herbart, Spencer, Harris, Butler, Eliot. The extracts are such as show in epigrammatic form the philosophy and theories of these educators. To be familiar with the thoughts here so carefully collected by Mr. J. R. Howard is in itself a large equipment in educational theory. It will be noticed, too, that the range extends from Plato to the present, affording thus, a general view of the history of education. The books of the series are in flexible cloth, gilt top, and small enough to slip easily into the pocket. [Fords, Howard & Hulbert, New York, 215 pages. 40 cents.]

Small books on great subjects seem to be the order of the day. The fact that so many people are expected to know something about everything makes a well condensed discussion not only timely but a time-saver. One of the handsomest of these series of little books is "The Beacon Biographies," published by Small, Maynard and Co., of Boston, under the general editorship of M. A. DeWolfe Howe. "The aim is to furnish brief, readable, and authentic accounts of the lives of those Americans whose personalities have impressed themselves most deeply on the character and history of their country." Each volume has a frontispiece por-

trait, a selected bibliography, a calender of dates, and is bound in handy form for the pocket. Necessarily in a series of this kind, some of the work is stronger than other, but the general reader may expect to find a very satisfactory discussion even in the poorest. The following volumes are ready: Phillips Brooks (the Editor), David G. Farragut (Barnes), Robert E. Lee (Trent), James Russell Lowell (Hale), Daniel Webster (Hapgood), Hawthorne (Fields), John Brown (Chamberlin), Aaron Burr (Merwin), Frederick Douglass (Chesnutt), Thos. Paine (Sedgwick). (Cloth, 75 cents.)

EDUCATIONAL, LITERARY AND GENERAL ITEMS.

Miss Etta Blaser, class of '97, Indiana state normal, is teaching in Indianapolis.

Mr. U. H. Smith, for five years teacher of mathematics in the Anderson high school, has been elected assistant registrar of Indiana university.

Fred J. Breeze of Vincennes, a graduate of the Indiana state normal, has taken a position as teacher of physics and chemistry in the high school of Phœnix, Arizona.

Room 33 at the Grand Hotel will be headquarters for the Inland Publishing Company during the state meeting, December 26–29. Friends of THE INLAND EDUCATOR are cordially invited to make themselves at home there.

Some of the teachers of Madison county are protesting against the failure to have a county association at Thanksgiving time. The fault seems to be that the usual committee to arrange for such a meeting was not appointed.

Scott Foresman & Co. announce the adoption of their *Modern Music Series* in the public schools of Washington City. This, following so closely the adoption in Chicago is a substantial endorsement for a splendid set of books.

The marriage of Jesse M. Neet, superintendent of the Parke county (Ind.) schools, to Miss Cora Cartey took place October 8. THE EDUCATOR extends most cordial congratulations and regrets that the news was so late in coming.

Andrew C. Life, who received his master's degree at Indiana university last year, and who has been in the science department of the Greensburg high school, has recently been elected to a similar position in the Wichita (Kan.) high school.

Miss Marie Roberts, who has been for the past ten years a most efficient teacher of mathematics and history, in the Ashland (Ky.) high school, has been obliged to resign on account of the illness of her mother. Miss Louise Nicholson of Elmira, N. Y., has been elected to fill her place.

Professor Ryland Ratliff of Fairmount, Ind., has given up his work at that place, which has extended over a period of fifteen years, and has moved with his family to Bloomington for a course of study. The Marion *Chronicle* of Sept. 20, contains a very complimentary notice of Mr. Ratliffe's work in Fairmount.

Through the kindness of Professor H. B. Wilson, superintendent of the Salem (Ind.) schools, we have an account of remarkably interesting exercises on their last arbor day. The tree planted by the high school was dedicated to James Whitcomb Riley. Salem has added a teacher to the high school this year and is to have a very good course of lectures.

Fulton county, Indiana, is taking commendable pride in its new graded school. It is modern in all its appointments and reflects no little credit on W. V. S. Norris, the trustee who supervised much of the work. There are already one hundred pupils, and three teachers. This is one indication of progress in school matters under the administration of County Superintendent W. S. Gibbons.

The program for the foundation-day exercises of Indiana university, January 20th, 1900, includes an address by Mrs. May Wright Sewall of Indianapolis, and one by the Hon. Charles L. Henry of Anderson. Governor Mount will preside. This is the first time in the history of the university that a woman has given the principal address, and the fact that it will be given by Mrs. Sewall will make it especially interesting to the educational public.

At the November meeting of the board of trustees of Indiana university a telescope with a 12-inch object glass was ordered, and an observatory will be erected at once on the university campus. This will be the largest telescope in the state, and is the same size as those owned by the universities of Michigan, Illinois and Ohio. The observatory will doubtless be named after Dr. Daniel Kirkwood who was for thirty years professor of astronomy and mathematics in Indiana university.

Arthur Griffith, an eighteen-year old boy of Kosciusko county, has been spending the past

month in the psychological laboratory of Indiana university. Mr. Griffith is a mathematical prodigy, and under the direction of Dr. E. H. Lindley of the department of philosophy has performed some interesting experiments. He is regarded as a mathematical wonder, and the experiments will be continued, and a result of them published by Dr. Lindley. During the Thanksgiving vacation the mathematical wonder will accompany Dr. Lindley to Brazil in the interests of institute work.

The Indiana society for the study of the child announces that all who are interested may become members by sending 50 cents, the annual membership fee, to N. C. Johnson, sec., Franklin, Ind. The purpose of the organization is to pursue child study literature to the end of mastering the results of investigations in this field of professional work, to make original investigations in this work to the end of adding to the already acquired knowledge, to give its members a more sympathetic insight into the life of the child, to enable teachers and parents to conform school and home life of the child to the truths of modern pedagogical science.

The schools of Bloomington are progressing in a very satisfactory manner under the supervision of Professor W. H. Glascock. His entire corps of teachers visited the Indianapolis schools two days during the latter part of November. Each teacher was assigned the duty of visiting a certain grade each day, and on their return to Bloomington, an experience meeting was held, and notes compared. The results of the visit were in every way satisfactory to Professor Glascock and his assistants. Professor Glascock is a graduate of Indiana university, class 1898, and completed the work for the M. A. degree last year at Chicago university.

Teaching in this country is so largely dependent upon the text-books used, that publishers have an important place in all efforts for the improvement of education. Fortunately, American publishers of school books are the most enterprising in the world. A notable instance of this enterprise is the Announcement of the Twentieth Century Text-Books just issued by D. Appleton and Company. Nearly one hundred volumes are in preparation, and they will cover the entire field of instruction in high schools, academies, and the lower college classes, embodying the latest results of pedagogical and scientific investigations. The books are prepared by eminent American scholars and teachers, who represent over forty of the foremost educational institutions in all parts of the country.

The new catalogue of Cornell university shows that 1966 students are now in residence at Ithaca, as contrasted with 1737 last year. Announcement is made that the trustees have decided to continue the summer session, which was tried for the first time last year under university direction and control. The corps of professors and instructors has been raised from thirty-eight to fifty-two. That teachers are the chief attendants at the summer sessions is shown by the fact that of 423 in attendance, 344 were teachers. Of these 130 were college graduates, while more than one hundred were or had been undergraduate students of colleges. The summer sessions at Cornell university endeavor to supply instruction especially valuable to teachers. Thus, from two to six courses are announced in ancient and modern languages, in all the sciences, as well as in history and political science. The professional advancement of teachers is promoted by courses in the science and art of education, and in the fundamental subjects like psychology on the one hand, and ethics and political and social science on the other. It is also announced that a number of distinguished professors from other universities have been invited to give instruction at Cornell during the summer session. A feature of the Cornell summer sessions of interest to teachers, is the fact that graduates of colleges are enabled to enter upon graduate work at these periods. A year's credit may thus in time be won, without the surrender of desirable positions.

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Vol. IX ONE DOLLAR A YEAR No. 6

THE INLAND EDUCATOR

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A JOURNAL FOR THE PROGRESSIVE TEACHER

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Departments: Primary, Flora J. Cooke
Mathematics, Robert J. Aley
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"Rich gift of God, a year of Time."

JANUARY, 1900.

EDITORIAL
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VOL. IX. JANUARY, 1900. No. 6.

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Happy New Year To All. THE EDUCATOR'S New Year wish for its friends—past, present, and prospective, is that 1900 may bring you all the good that is good for you, and that you may all grow and prosper.

* * *

Due Credit. We are reminded by the editor of *Primary Education* that the song used in the Thanksgiving exercise of our November issue under the title "Three Maids of a Housekeeping Turn" first appeared in her paper. The source from which we took it, Kellogg & Co's *How to Celebrate Thanksgiving and Christmas*, did not name this fact. We gave proper credit to Kellogg & Co., and on being advised of the facts we are glad to say that the song was written by Olive M. Long, and first appeared in *Primary Education*.

* * *

Patrick Mullen. In the December *Atlantic Monthly* Mr. Jacob A. Riis relates the following anecdote which seems good enough to pass along. It may serve to point several morals; and teachers may possibly find a hint in it applicable both to themselves and their pupils: "Patrick Mullen was an honest blacksmith. He made guns for a living. He made them so well that one with his name on it was worth a good deal more than the market price of guns. Other makers went to him with offers of money for the use of his stamp; but they never went twice. When sometimes a gun of very superior make was brought to him to finish, he would stamp it P. Mullen, never Patrick Mullen. Only to that which he himself had wrought he gave his honest name without reserve. When he died, judges and bishops and other great men crowded to his modest home by the East River, and wrote letters to the newspapers telling how proud they had been to call him friend. Yet he was, and remained to the end, plain Patrick Mullen, blacksmith and gunmaker. In his life he supplied the answer to the sigh of dreamers in all days: When will the millennium come? It will come when every man is a Patrick Mullen at his own trade; not merely a P. Mullen, but a Patrick Mullen. The millennium of municipal politics, when there shall be no slum to fight, will come when every citizen does his whole duty as a citizen, not before. As long as he 'despises politics,' and deputizes another to do it for him, whether that other wears the stamp of a Croker or of a Platt, it matters little which, we shall have the slum, and be put periodically to the trouble and the shame of draining it in the public sight. A citizen's duty is one thing that cannot be farmed out safely; and the slum is not limited by the rookeries of Mulberry or Ludlow street."

* * *

Dr. E. G. Cooley Succeeds Col. Parker. The vacancy in the principalship of the Chicago Normal School has been filled by the elevation of Edwin G. Cooley, now principal of the high school at Lagrange, Ill. Dr. Cooley is a native of Iowa, a graduate of the Iowa state university, and holds a degree from the university of Chicago. He has had some tempting offers before, but has preferred to work where the facilities for study and growth were most favorable. It is understood that the board at Lagrange will not release him at present, owing to the fact that he has supervised the construction of a fine new building there which is not quite completed. Meanwhile Dr. Giffin will continue in charge of the normal school.

* * *

Radical Reforms Proposed. After a banquet not long ago at the Palmer House, Superintendent Nightingale of the Chicago high school made a speech that is considered the most radical ever made by a public school official. The somber sentiments of Mrs. Lew Wallace and Mrs. Rebecca

Harding Davis were entirely eclipsed. Among other things, he said: "I dislike per cents, I despise examinations. They are all an abomination. There are pupils who do poorly in the fifth grade, who will do well in the sixth or the seventh grade. . . . Give such the right of way. Keep them not in dry pastures where only stubble remains. Give the physical time to adjust itself to the intellectual, and the intellectual to the physical. . . . In our public school system all is clogged and congested. Tasks have been so multiplied, subjects of study so increased, the demand upon one's time and thought made so engrossing, that it is practically impossible for a teacher to become expert in anything and not even mediocre in everything. . . . Why should a person who has no talent for drawing, and no skill in vocal music, and yet is profoundly gifted in geography and history, be forbidden to teach?" With such specialization on the part of the teacher, Dr. Nightingale would grant the largest possible latitude to pupils. "Some should take many subjects, some few; some should be allowed to progress rapidly without injury; others to advance slowly without harm. Some should remain at school all day; some only a part. There should be no undue repression, no fatal stimulants. . . . I would abolish and send into the limbo of eternal oblivion all rigid grading and classification. . . . It is the heritage of tradition, conceived in ignorance, nursed in folly, and perpetuated through inertia. As I would abolish all rigid grading, so I would remove all obstacles and annihilate all distance between the elementary and the high school. The access to the one should be as easy as the graduation from the other. There should be no wall or partition between the eighth and ninth grades; no rigid examination at the end of the one and no freezing-out process at the beginning of the other." Such statements from most speakers would be considered almost fanatical. But Dr. Nightingale is a man of large experience, of high standing in educational circles, and has a right to be thought sane. He surely has a right to be heard. His utterances have almost startled some of the Chicago teachers. However, there are many both in that city and throughout the land who will be in sympathy with the proposed reforms, revolutionary though they are.

* * *

1900 The controversy about when the twentieth century will commence has subsided, and we all understand pretty well now that the new year just commencing is the closing of the old century, not the opening of the new. This gives us one more chance to help round-out the old century into fullness. The closing year is sure to be a grand one anyway. The forces and influences in motion will carry us with majestic stride into the twentieth century, but in the general progress each of us must feel that his own share depends upon his individual faithfulness.

* * *

Score one for Maxwell. In his last yearly report it appears that Superintendent Maxwell of the New York city schools made some statements which, though believed to be true, reflected unfavorably on the board of education. This report as well as its publication, is required by law, but the board attempted to suppress it by voting to lay it on the table. The natural result is that the report will have the widest kind of a circulation, and the defeated board besides getting a good deal of free advertising of an undesirable character will doubtless be shamed into publishing the report voluntarily after. This board, be it remembered, is the same one that is trying to boycott the text-books published by Henry Holt & Co., because Dr. Butler, who edits the *Educational Review* for that company, happened to refer "jokingly" to a member of the board as "A fine old mastodon"! Mr. Maxwell's courage in thus expressing his convictions is worthy of both commendation and imitation.

* * *

Important Transfer of Text-Books. Teachers generally will be interested in knowing that the old established house of Harper and Brothers has disposed of its entire list of school and college text-books to the American Book Company. We are authorized to say that this list numbers some four hundred titles, and that they include important works in literature, history, mathematics, natural science, and ancient and modern languages. Among them is Rolfe's Shakespeare in forty volumes. Of the newer books thus transferred are Hill's Rhetorics, Phillips and Fisher's Geometries, and Ames's Physics, together with a considerable number that are still in manuscript or under contract. This is a fine acquisition for the American Book Company, and the sale will doubtless be an advantage to Harper and Brothers as well, whose affairs appear to have become somewhat complicated. It is a pleasure to learn that this publishing house with its fine traditions and its splendid list of valuable books will continue its business, though for the present it will be administered through the

management of Colonel George B. M. Harvey. It is also a pleasure to know that from 1817, when the house was founded, up to the present day the name of the Harpers has stood for honor and fair dealing. They have simply clung to old methods, and in the keen competitive race have fallen somewhat behind. The seventeen Harpers who were managing departments now step aside in favor of the one man whom they call to be their chief. There is small doubt that Colonel Harvey with his large experience in modern methods will be able to place the house again on a sound basis and thus save the name of Harper and Brothers to the publishing world.

* * *

No National University For some years the propriety of establishing a great university at Washington, D. C., has been considered and discussed among educators in America. Such a school would probably bear the same relation to the national government as the Smithsonian Institution does, and it was hoped in this way to make the Smithsonian, and the advantages which it offers, available to a larger number of students. The question was finally submitted to a committee of which President W. R. Harper of Chicago, is chairman. The committee has reported and unanimously disapproves of the proposition. The same committee reported in favor of maintaining a school in Washington for consuls, leading to a life career in the government service, and a plan by which students may have advantages for advanced study and research.

* * *

Business Education. There is more than a grain of wisdom and common sense in the suggestions made by President Eliot in an address on "Commercial Education" delivered not long ago. He maintains that boys who expect to become business men should study German, French, Spanish and economics. Under the last he would include such studies as statistics, banking, insurance, commercial geography, commercial law, industrial combinations of capital, labor unions, the financing of new enterprises, etc. Teachers of these branches should keep their knowledge of commercial conditions fresh by continuous touch with commercial centers. This view of the president of Harvard seems to endorse the proposition made in some cities for a commercial high-school. It is well to notice, however, that with such special preparation he demands, as an indispensable element, a sound secondary education extending to the pupil's eighteenth year.

Uniform Courses of Study. Teachers will find an interesting discussion of this subject in the *Atlantic Monthly* for December under the title "Is there a Democracy of Studies?" The writer, Andrew F. West, speaking of the committees in abundance, by sevens and tens, twelves and fifteens, and of their conventions, debates, reports and resolutions aiming to discover the true state of affairs and to propose relief measures, makes this remarkable statement: "Amid all the talk it has gradually dawned on us that a spontaneous and silent change is going on, that voluminous discussion has not created the change and that the change has been causing the discussion." The real causes of the change Mr. West takes to be (1) The long-slumbering dissatisfaction of parents and teachers with the miscellany of, loosely-related studies and the resulting loss of thoroughness and vital unity in the education of the scholars. (2) The enormous increase since 1890 in the enrollment of pupils in secondary schools—an increase that is practically doubled in ten years." These two causes, as Mr. West maintains, are producing the change, and the discussion referred to has been but an incident of the change. THE EDUCATOR is ready to agree with the writer in the causes assigned, but we think he altogether under-rates the work of the various committees as an agency in bringing about the change. It is one thing to recognize and even to understand the defects in a system, but it is far more to set going the forces that will remove them. It is true, of course, that parents and teachers did have a "long-slumbering dissatisfaction," but it is only since the large educational assemblies through the thorough discussions of its committees have laid the problem before the teachers of the whole country that anything like united action has become possible. In reply to his question Is there a democracy of studies? Mr. West selects the following figures from a table furnished by the United States Commissioner of Education.

Studies.	Enrollment in 1889–90.	Enrollment in 1897–98.	Percentage of increase.
Latin . . .	100,144	274,293	174
History (except U. S.)	82,909	209,034	152
Geometry .	59,781	147,515	147
Algebra . .	127,397	306,755	141
German . .	34,208	78,994	131
French . .	28,032	58,165	107
Greek . . .	12,869	24,994	94

"It is," says the writer, "a list of gravely important facts which cannot be gainsaid. The classics, history, mathematics, and modern languages, with nothing else—except perhaps Eng-

lish—are gaining swiftly, not by prescription, but by the natural preferences of parents, teachers and pupils." This appears to say very plainly that there is a marked and definite tendency in a certain direction. The article is particularly commended to all teachers who are interested in the question. Like the excellent reports of the various committees, and like such splendid articles as the recent one by President Eliot, which also, as we think, Mr. West underestimates, this will help all who read it to think out the problems for their own schools, and to form intelligent opinions upon the question of a broad unity.

* * *

A Lesson in Politeness.

Among the things greatly enjoyed in a visit not long ago to the old historic town of Santa Fe was the conduct of about sixty children in one of the lower grades of the city schools. The teacher was a Roman Catholic sister, and the pupils were girls ranging in age from about eight years to fourteen. The low, one-story, adobe buildings, nestling in the sun, behind a high wall that encloses the whole play-ground may not seem picturesque to the people who pass there every day, but to one from the east they are as much so as a Chicago sky-scraper would be to the native New Mexicans. As we were about to enter, Superintendent Wood said "you will find them very polite here." Every pupil rose with a pretty bow and remained standing until we were seated. Then the recitation, a reading lesson in easy words from a chart, was quietly resumed. There was a beautiful absence of the silly simpering and giggling that one finds so very prevalent in visiting schools. As we were at the door to go the pupils again rose and together said "good bye." There did not appear to be anything perfunctory in either of these little courtesies. They were so simple as to be charmingly polite. And remember, if you please, that these children were nearly all from the plainest homes, that many of them were Mexican or Spanish, and that their schoolroom had a low ceiling, was insufficiently lighted and badly crowded. There may possibly be a lesson in this for the pupils of some of our magnificent schools with all the comforts and facilities that money and ingenuity can procure.

* * *

Self Government for Pupils.

To the average teacher the maintaining of discipline is the *bête noire* of the schoolroom. It makes large draughts upon both energy and time, it tends to counteract the real pleasure of teaching, and it often arouses in the child a protest against arbitrary government, that works to his disadvantage in later years.

In the November issue we named two reasons why there should be good order in the schoolroom:—that the work of the school may go on without interruption, and that the pupil may learn the lesson of subordination to rightful authority. Industry was named as the chief thing in promoting good order, and the teacher must be sure that no element of disorder be assignable to her own disposition or her lack of preparedness.

Still maintaining all these points, we wish to endorse the better plan, where practicable, of self-government by the pupils themselves. If self-control in adults is a virtue it certainly is not less in boys and girls. Indeed this is or should be one of the lessons that we constantly try to instil; but what we substantially say to the child is, you will have to govern yourself by and by but you are not yet old enough to learn how; therefore your teacher must govern you now. Perhaps we should be surprised that when they do grow up so few are really lawless. It is well that here and there teachers recognize the value of giving pupils a chance to practice self-government. *Participation* is coming to have a new meaning in the better schools. The child's life in school is regarded as a very important part of his whole life. His environment, the influences about him, the habits formed during the early, impressionable years, will very nearly determine character and destiny.

Now we lay great stress upon preparation for citizenship. It would be included among the things named by any one proposing to tell what the elementary and secondary schools should do for the youth of a republic. We ask the schools to give pupils a knowledge of their true relations toward society and the state, a due regard for the rights and the property of others, a sense of responsibility in public affairs, and an acquaintance with the ordinary methods of conducting local government. But we leave it all theoretical. Young men leaving school find themselves unprepared for the full duties of citizenship, and hence, too often, neglect them altogether. Young women find themselves equally uninformed, and under stress of social and home duties are very likely to remain so.

These are some of the reasons why pupil self-government is meeting with such favor. Where it has been faithfully tried the results have been most satisfactory. Order has been greatly improved, the teachers have been relieved of care and tension, pupils have felt individually responsible for the name and honor and conduct of their respective school communities, and their sense of justice and fairness has developed while they learned in a practical way how to administer their local affairs.

The plan is not applicable in all schools. It requires tactful care and cooperation from the teacher. But there is room and need for a vast multiplication of the school communities already organized. The one at the John Crerar school in Chicago is well known. There is also one in the Hyde Park high school, one or more in New York, one in Omaha, one in Milwaukee, etc., etc. These have all been thoroughly tested and found successful. The December *Review of Reviews* has as its leading article, written by the editor, a study of this very subject, entitled "The School City." It is the best discussion of the subject extant and will be helpful to all who are interested. A single quotation will show the view taken by Mr. Shaw:—"Citizenship in a self-governing community should be developed by the practice of the principles of self-government from the earliest possible age. Government has to do with the making and enforcing of rules and regulations for the well-being of people associated together as a community of some sort."

* * *

Ideals.

In offering a thought for the New Year it is not our purpose to soar too far above the earth, as might perhaps be surmised from the subject chosen. It is peculiarly important to the teacher that he keep in close contact with the world about him. Like the ancient Greek he must keep his feet to the earth if he would gain that strength and breadth and that knowledge of men which will give his teaching practical value. He needs to know the commercial, the social, and the political world not less than the world of education.

But after all it is important that the teacher be a person of high ideals. If he finds that the standard of morality in commercial transactions is too low he should set a higher one and persistently hold it before his pupils. If he finds a tendency towards corruption in politics he should point out the shining examples of men who have dared to stand for integrity in public life. If he finds more or less of hollowness and sham in the social community let him show the beauty of honor and simple sincerity. Suppose a teacher could instill into the pupils that come to him during a year principles of strict honesty in business, of open integrity in politics, and of sincerity in social relations, what might we not expect? Suppose the teachers of the whole land should try to do this for one whole generation! And, indeed, is not this our reasonable service?

It does seem that the teacher must not only cherish his own ideals but that he must help create those of his pupils. Dr. W. T. Harris loses no opportunity of emphasizing the need of heart education. Thus appears the need of high standards for the teacher. None of us is likely to surpass his ideal. It is not often that we reach up to it. And right there is the rub. We too often know what we should be and even what we may be, but we hold our ideals off at arm's length, as if afraid to let them take definite form. The New Year is a good time to be honest with ones self. It is a good time to go persistently to work at a realizing of our best purposes and impulses. Let us not resolve so much as *do*. Contemplation of the perfect is good but good deeds are better. In proportion as we can make our ideals real to ourselves shall we be able to make them prevail in the communities where we live. If our standards have been too low let us advance them, but above all let us try to measure up.

The greatest grow the longest time and they whom nothing can arrest in their onward march to the fountain head of truth and love are divine men and women.—*Bishop Spalding.*

HAWAII AND HER SCHOOLS.

By FLORA J. COOKE.

IN a recent issue of the *School Board Journal* of New York and Chicago the Hawaiian Islands were represented by the well-known little naked savage who stands gazing wonderingly at a building labeled "Public School." The people of the Islands might well hesitate between indignation and amusement at this absurd cartoon. The child referred to can scarcely have existed since 1820—certainly not since 1840, for at that time "In every village and hamlet where a dozen children of school age could be assembled, were established schools open during ten months of the year."



South Sea Islander. *Hawaiian.* *Part Hawaiian.* *Norwegian.* *Chinese.* *American.* *Japanese.*

GROUP FROM THE FORT STREET SCHOOL.

The statement quoted, and an interesting summary of the school statistics, are given in Henry S. Townsend's article upon "Education in Hawaii," which appeared in the *Forum*, January, 1898. Mr. Townsend is the Inspector-General of Schools for the islands and, assisted by T. H. Gibson and others, he is seeking in every way to raise the standard of education there. No one regrets more than he the educational isolation and specialization which exist to some extent among the races, his ideal being to unify the interests, and use the experiences and good qualities of each race to the accomplishment of the greatest good of the community.



HIGH SCHOOL, HONOLULU.



KAMEHAMEHA SCHOOL, HONOLULU.

The school exhibit of 1899 gave evidence that the children were not confined to writing in their thought expression, but freely used cloth, wood, weaving materials, paints, clay, sand and cardboard. The work indicated great activity and a struggle after better things, and testified to the energy and zeal of a large part of the teaching corps.

The leaders in the work have recognized the impossibility of grafting a ready-made system of education, however good or however bad, upon the children of Hawaii, and are endeavoring to make it meet the demands arising from the possibilities and

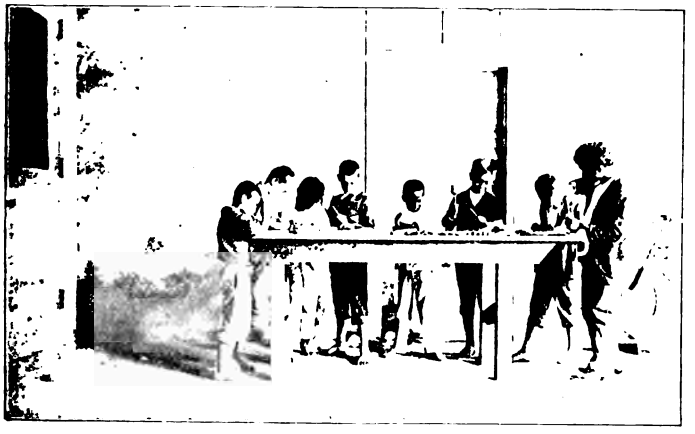
necessities of the cosmopolitan population. For this reason the changes being introduced are in the nature of reactions against the formal, isolated drills in language and mathematics, which still abide, *in some places*, in the land to which the islands are annexed. It is not easy to adapt education to the requirements of children of seven nationalities, such as one meets *every day* in Honolulu. The picture of a class of children in the old "Fort Street" school represents almost as many nationalities as children. The characteristic dress and bright colors worn by these children, even by babies, makes them very picturesque and fascinating to strangers.



JAPANESE TEACHER WITH KINDERGARTEN CLASS.

When one considers the problem of teaching forty-five or more children differing, as they do, in race characteristics, language, and customs, he can appreciate the difficulties which confront the teachers in Hawaii.

On the other hand, the advantages are great. The possibility that the constant association of the races, under good conditions, will harmonize the diverse historical and geographical race interests into a general, broad community interest is certainly inspiring to a teacher; and such a motive practically suggests the course of study in history, geography, literature and art. In their immediate environment there is constant appeal to the æsthetic sense of the children, in the beauty of the mountains, the sea and the vegetation. The following pictures give no conception of the wonderful variety and beauty of coloring in tree, foliage, flowers, and fruits, in the shallow reef waters and the red and yellow soils.



MANUAL TRAINING CLASS.

Each island is in itself a miniature continent where, as in an experimental laboratory, the children can appreciate, because seen in so small an area, the great laws of the universe, constructive and destructive, acting out the story of the physical changes of the world.

Great social problems must be solved by these children, and upon their education, upon their teachers, to a great extent, must rest the responsibility of the understanding and the conduct of Hawaii's future citizens.

There is much to be done to improve the condition of the laboring classes; the children in many places are but too familiar with their degradation. A school child can scarcely travel five miles from home without coming into contact with at least one of the many occupations found on the islands. Sugar is at present, because of the larger profit in its culture, crowding out the smaller industries, such as the cultivating of pineapples and coffee or the making of raisins and stock growing.



NATIVE POUNDING TARO ROOTS INTO PASTE FOR POI.

The rice industry is entirely in the hands of the Chinese. The value, as exports, of sugar, rice and coffee in 1897 was $15,715,493, and wonderful progress has been made in the cultivation of sugar since that time.

It will be seen that though the school has perplexing and even formidable problems it has, as a measure of compensation, great natural advantages.

The new schoolhouses are attractive and suited to the climatic conditions. One of the government schools is named for the late Princess Kuiolani. It has twelve class rooms and a large assembly room where the children all meet for general class exercises. Mr. Armstrong Smith, the principal of this school, may justly be proud of its equipment which he is constantly increasing. It has now a stereopticon and many sets of slides, a telescope, a printing-room where twelve of the older children set type under instruction, and print reading lessons for the primary grades, and other matter helpful to the teachers and children of the school. There is also a well-catalogued and growing library, a school garden under the direction of a trained agriculturalist and a department of manual training partially represented in the cut given.

Besides the government schools, a fine high school and Oahu College, Honolulu has a normal school which has a practice department of six grades. This school under the supervision of its principal, Edgar Wood, is doing most excellent work. A two-year's training course is required, and fifty students were enrolled last year, twenty-two of whom were native Hawaiians.

A report of the schools of the islands which does not describe some of the many select schools, as the Damon Chinese school, the Lahainaluna, Makawao, and Hilo seminaries for native children, is most incomplete. Much should be said concerning the Kamehameha schools for native boys and girls, so richly endowed by Mrs. Bernice Pauahi Bishop. This school is directly connected with the natural history museum which, through the work of Professor W. T. Brigham, have become world renowned among scientists and ethnologists. In both these last named schools the principals, Mr. Uldrich Thompson and Miss Ida Pope, with an able corps of teachers, are carrying on the work of educating the hand together with the brain, under the most favorable conditions. Their good work is already bearing fruit in their graduates, and we have reason to expect much from their experiments that will help in solving that most difficult problem—the best education for a primitive race.

There is also in Honolulu an interesting and well-established Kindergarten Department under the supervision of Miss Francis Lawrence, but an adequate description of any of these institutions would alone require more than the space to which this paper is limited.

In the Primary Department are some papers which were given to me by children of the different races. They are reproduced exactly as they were written, without correction, and while the few specimens cannot fairly represent the average work of a large number of children, they do indicate something of its general tone and character. Finally, I can wish nothing better for the readers of this unsatisfactory paper than that they may have the privilege of visiting the islands and forming for themselves ideas of its educational system and policy; but, even if we disagree concerning these things, we can have but one mind concerning the wonderful beauty of the scenery, the matchless, awe-inspiring volcanoes, the charm of the sweet music of the natives, and many of their quaint, kindly customs, one of the prettiest of which is as follows:—on steamer days many native women sit on the street pavements and weave flower-wreaths, or "Leis," all day long. With these, any one sailing away from the islands is laden and crowned by his friends, each one being bestowed with an "Aloha", their word of good greeting, and many wishes for a pleasant journey or a speedy return.

It is most interesting to notice the manner in which "poi," the favorite and *universal* food of the natives, is made from the taro rootstalks. The leaves of taro resemble those of the calla lily, and the plant may thus be distinguished in the picture. It is usually grown between ditches of irrigating water, but we have here represented one of the several varieties of high-land taro. After the taro paste ferments it becomes "poi" and is eaten with the fingers, being called "one-finger, two-finger" or "three-finger poi" according to its consistency.

There is a great temptation here to tell about the interesting native feasts, their wooden bowls or calabashes made of beautiful polished wood, their simple grass houses, their crude old temples, their ancient habits of dress, etc., but this paper can barely touch upon more than one phase of Hawaii's numerous interests, and we have chosen to report upon what was observed concerning the educational conditions.

CHICAGO, ILL.

TALKS ON THE STUDY OF LITERATURE.—IV.

By EDWIN A. GREENLAW, A. M.

IN certain respects the study of the works of Shakespeare may be regarded as the culmination of the secondary school course in English. Trained by his study of prose style to grasp quickly essentials in thought, by the study of poetry to imagine vividly and to feel deeply, and by the study of fiction to analyze character, the pupil is ready to approach with intelligence the masterpieces of the world's greatest literary artist. Instead of presenting simple forms of human thought and experience and environment, the dramas of Shakespeare combine these elements in complex forms. The study of Bryant's poetry awakens in pupils a new sense of the meaning of nature; that of Irving's works illustrates how ease and elegance of style may take the place of rough and unmusical diction. Carlyle embodies in language vigor and emphasis of feeling; while Tennyson calls into being a world of enchantment, peopled by knights and ladies, and abounding in tournaments and all chivalrous enterprises. Hawthorne understands the Puritan character, and causes us to understand it better than the colonists understood themselves. Scott makes use of his knowledge of history to portray vividly the life and events of former years; while in the *Vision of Sir Launfal* and the *Commemoration Ode* Lowell teaches the duty of service and shows that poetry and truth are not mutually antagonistic. But in the dramatic masterpieces of Shakespeare we find combined all these elements and more. He is not of a day, or of an age; he does not represent a mood, his knowledge and his insight are not circumscribed. He touches life at every point, and in his dramas every phase of human character is represented. The appeal to the emotions is constantly felt; the epithets and figures tax the imagination to the utmost; the vocabulary is large and effective; and the student who approaches these works in

the right spirit finds every mental faculty strengthened and stimulated. Few subjects in the school curriculum have the educational value represented by the dramas of Shakespeare.

Of the plays suitable for use in secondary schools, *Macbeth* is one of the best. In it the author accomplishes results quickly and effectively, for though it is packed with incident, it is one of the shortest of the plays. While it is not abstruse, like *Hamlet*, and presents no serious difficulties in interpretation, yet on every page are problems to be solved which appeal to the highest powers of the student's mind.

THE TEACHER'S PREPARATION.

1. The teacher should know as much concerning Shakespeare as possible. In addition to a familiarity with mere biographical details, he should be familiar with English life and customs in Shakespeare's day, and should have a considerable acquaintance with the most important dramas. It is sheer presumption to undertake to interpret one of these masterpieces to a class of high school pupils without the preliminary study which alone can make effective the classroom work and give authority to the interpretation. "We are all poets," says one, "when we read a poem well"; that is, when we appropriate to ourselves the results of the poet's insight. But let no one dare to think that it is an easy matter, or that it is a matter of small moment, to think Shakespeare's thoughts after him, and, more than that, to attempt to interpret his thoughts to a body of students. The teaching of Shakespeare's works is a matter of responsibility, or it is nothing.

2. The teacher should be especially familiar with the literature of the Elizabethan age, with English history in the period from 1550 to 1650, and with the history of the drama.

3. One or more of the numerous guides to the study of Shakespeare will be found helpful. Corson's "Introduction to the study of Shakespeare" and Dowden's "Mind and Art of Shakespeare are especially to be recommended. If possible, the teacher should study the article "Shakespeare" in the *Encyclopedia Britannica*. The teacher must himself be an investigator if he would make investigators of his pupils.

4. Repeated and thoughtful reading of the text is essential. At every reading new appreciation will result and points before unnoticed will crowd upon the student's attention. To be effective, the study of literature must largely be assimilative in character, and nothing is so conducive to this end as repeated reading of the text. It is well to take note of one's observations, either in a separate note-book or on the margins of the pages; significant words and expressions should be underlined, and topics for investigation noted for future reference. The teacher forms no exception to the principle in pedagogics which makes education dependent upon the self-activity of the student. Self-activity upon the part of the teacher before he attempts to guide his class will result in enthusiasm, fullness of knowledge, and depth of insight which can be attained in no other way.

5. Careful planning beforehand of the work to be assigned and of the method to be pursued in conducting the recitation is a necessary element. While the class exercise must not be allowed to become mechanical and formal, it should have precision and definiteness of purpose. The teacher should know just what he expects from the pupil, and just what he wishes to help the pupil to see.

THE STUDENT'S PREPARATION.

1. By way of introduction to the study of the text, pupils may be required to investigate certain topics and to report upon them before the class. Additional variety and interest will be gained if the class be divided into four or five sections, each section to investigate a distinct topic. Thus, one section might profitably consider the Miracle plays, another find something as to the scenery about Stratford, together with some items concerning the old town itself; another find interesting facts concerning home and school in Shakespeare's time, while a fourth section might study the social customs, the holidays, and the pastimes of the sixteenth century. In reporting upon these topics students should be required so to plan what they expect to say as to present it in the most definite form possible. This in itself is an exercise of considerable educational value. It trains students in the use of books, in the gleaning of essential points from a mass of data, and in effective methods of presentation. For the topics above referred to, Rolfe's *Shakespeare the Boy*, pub-

lished by the American Book Company, will be found very valuable.

2. All students should be required to know: (a) the principal events in Shakespeare's life; (b) the chief characteristics of the Elizabethan literature, together with some knowledge of the writers representative of the period; and (c) the history of the play.

THE STUDY OF ACT I.

The teacher must sharply distinguish between the condensation characteristic of a drama like *Macbeth* and the prolixity of the ordinary novel. In the works of fiction, the author is permitted to reveal character not only by action but also through his own explanation and comment. For the dramatic writer, however, no such possibility is presented. He must reveal his characters wholly through action, and every scene must be pruned of all verbiage. It is easy for one who has been assigning for study considerable portions of *Silas Marner* to fall into the error of dealing with *Macbeth* in the same way. In the study of the drama, as in that of other forms of poetry, quality of work must outweigh quantity. The teacher must enable his pupils to grasp the secrets of the author's dramatic effects, to note the significance of every line, even of every word, and must not permit him to pass a scene until it has yielded to him its full content.

In another place reference has been made to the fact that no study suffers so much as English from vagueness of method. The pupil is turned loose and told to "study" a certain number of pages of his text. But how shall he study, when he has not the remotest idea as to the best method? It follows, therefore, that an unusual responsibility devolves upon the teacher of literature; for he must not only assign lessons and conduct class exercises, but must also show to his pupils the right method of studying. Of course philological discussions, hunting down of allusions, repeating the story, memorizing of the notes, and similar "methods" can be used, and such methods frequently are used, by those who fail to grasp the true object of the study of literature; but the thoughtful teacher does not pin his faith to any one or to all of these make-shifts. In teaching dramatic masterpieces, the writer has found it helpful to supply to the pupil such topics as will best assist him to prepare his lesson intelligently. Care is taken to avoid questions which will destroy the self-activity of the pupil, the aim being to cause the student to think and to investigate. Specimen topic lists will be used in this article to illustrate these statements.

The opening of *Macbeth* is deeply significant. The wierd sisters enter in the midst of a thunder-storm which foreshadows the darkness and the uproar that is to follow. Says Dowden: "When the play opens, the sun is already dropping below the verge. And as at sunset strange winds arise, and gather the clouds to westward with mysterious pause and stir, so the play of *Macbeth* opens with movements of mysterious, spiritual powers, which are auxiliary of that awful shadow which first creeps and then strides across the moral horizon." We note, also, that these three mysterious beings are to meet with Macbeth, a fact which at once arouses our interest in him, and which shows the true purpose of the scene. When he assigns the lesson, then, let the teacher dictate to the class, or else present in some form, such topics as the following:

Act I.—Scene 1.

1. Is there any significance to you in the fact that the drama opens in this manner?
2. Note the condensed statements made by the witches.
3. What elements give mystery and dread to this opening scene?
4. Are you at all interested in Macbeth?
5. What is the purpose of this scene? Write out your opinion and bring it to class.

In the second scene our sympathies are still more effectively enlisted in Macbeth's behalf. It should be noted that the dramatist makes use of the principle of suspense by keeping his hero in the background until we are perfectly prepared for his entrance. In addition, these results are accomplished by indirect means. For example, it is far more effective for us to hear of Macbeth's bravery from the lips of another than it would have been for us to see the battle at its height and Macbeth leading his troops. Testimony is given to us by two persons belonging to different ranks in life. The sergeant is not sent as an official messenger. He is mortally wounded on his way to the rear; but he stops to express, in his rough way, his love for Macbeth and his ad-

miration of the hero's daring. He becomes so interested in his recital that he forgets his own terrible wounds, until weak from loss of blood he faints away. *What must Macbeth be*, if he so powerfully affects an ignorant and rough soldier?

Finally, in this scene Shakespeare employs with telling effect the principle of contrast. In those rude times, the place of the king was at the head of the host, leading them on to victory or to defeat. The very word "king" means "can" or "ken". He was at first elevated into office by virtue of his prowess in war. Only in later times did the office become hereditary, and for centuries after the time of Macbeth and Duncan, the king was, in fact as well as in name, commander-in-chief of the national forces. But Duncan rests in his tent, while brave Macbeth fights in his behalf. Which then is more kinglike, more fit to rule?

Before suggesting a list of topics to be given to the pupils in order to direct their study, attention may be called to the contrast between the sergeant and the thane. The former speaks roughly, even coarsely, but his words bear eloquent testimony to the worth of his general. Ross, on the other hand, speaks calmly, almost coldly, his business-like, direct address being in striking contrast with the enthusiasm of the dying sergeant. But he, no less than the other, expresses his admiration of the victorious commander, and even calls him the god of war. With this we need no further proof as to the kinglike qualities possessed by Macbeth, and we are impatient to see the hero face to face.

Scene II.

1. Who is Duncan? Note that Malcolm and Duncan *are not at the battle.* What conclusions do you draw from this fact?

2. Study closely the words spoken by the wounded sergeant and report in writing your opinion of his character. How does the report made a little later by Ross compare with this? Why the difference?

3. How does the sergeant feel toward Macbeth? Do you have a similar opinion of Macbeth's character? What do you think of Duncan?

4. What has Shakespeare accomplished in this scene? Are the most important effects gained by direct or indirect means? Is it the aim of the author to explain fully or to suggest? Write your answers to the questions in this topic in the form of a paragraph.

When the students show a proper mastery of the thought and of the character-effects, attention may be directed to other matters. Difficult passages, such as the simile in the sergeant's speech (ll. 25–28); archaic or unfamiliar words, and allusions should be explained. It will be noticed that these elements are here made subordinate to the true work of the pupils, which is to grasp the meaning of the events and words in their relations to character. But something more remains. The teacher should see to it that the pupil appreciates the passage emotionally, that he recognizes the difference between dramatic poetry and prose fiction. In his study of *Silas Marner* he dealt with character-effects; here he does the same work, but more. Words are used which belong only to the diction of poetry, or which are poetic because now obsolete. The pupils should be taught to notice the difference between such words and those which are commonly found in prose. The rhetorical figure, also, should be named, and the pupils be required to state the rhetorical or emotional value of each. Let the question constantly be asked, "What is the effect, the value of this metaphor, or simile, or personification?" The object of the study at this point is not to make a dry catalogue of terms; it is to insure the emotional appreciation of the poetry by the pupil.

In concluding the present article, attention may be called once more to the fact that this work, to be effective, should not be passed over hastily. "Haste makes waste," is a proverb as true in the world of literary study as in the realm of practical life so dear to Poor Richard. Into the sixty-seven lines of the first two scenes of *Macbeth*, the master has condensed at least two chapters of the ordinary novel,—and it is because of this very condensation that the material must be studied slowly and thoughtfully. Not mere memorizing, but thought and feeling should be the standards of value. The study of the literary masterpiece should help the pupil to

"Think clear, feel deep, bear fruit well."

NORTHWESTERN UNIVERSITY.

ART IN EDUCATION.*

By W. H. GLASCOCK.

AMERICA is rich in the forces and conditions essential to high art achievement, yet we have produced no really great art. In our eager haste for material progress we have lost sight of some of the finer things of life and have all too narrowly kept our minds and energies turned toward the purely practical as an end and have laid hold of the means that would enable us to reach that end most surely and most directly. We have been too much absorbed in the task of building a nation to give ear to the finer voices of the spirit. In this hurried struggle we have been led into a one-sided development. The demand has been for greater intellectual power, and the emotional side of our nature has been neglected. This demand has been met to the full, and great wealth has been accumulated. If we are wise we will equalize our development by adding feeling to intellect and will turn our gathered wealth back into life as a means of higher culture.

Science has been the chief means by which we have moved forward in our material achievement during the past fifty years. It has also in a large measure contributed to our intellectual development. It has been able to accomplish this work and establish itself through its close relationship to the life of the people. It has been brought into immediate contact with the things whereby the people live, and has thus been made to supply in part their daily needs. As soon as it touched the life of the people in such a way as to give it an economic value, there came a demand for larger and better training in science. The result is that science now no longer dwells with the few in the high places of thought, but has become a part of the common thought and action of the whole people. The demand which science has made upon the individual is essentially an intellectual one. The emotional element in human nature has necessarily been given little opportunity for expression. Such a development is neither full nor healthy. The best of human life lies beyond the power of demonstration, and the power which demonstrates. A purely intellectual response to the questionings of humanity in the presence of the glory and the mystery of the universe can not satisfy the longings and prophecies of the human soul.

The present art movement grows out of the recognition of a need beyond the reach of science and intellect unaided. The people are becoming conscious of an abundant and beautiful inheritance into which they have not yet come. It is the high duty and privilege of the public schools of America to bring our whole people into full possession of this new-found inheritance of beauty. It is their special function to form a proper social life. As a mediator between the child and the social organization they are to select from the complexity of social experience whatever is of greatest value and bring it to the child simplified and idealized as a means whereby he may be fitted to participate in and contribute to the highest social experience. From the supremest moments of social experience as embodied in art, the public schools may bring to the life of the individual child the beauty wrought out and kept by humanity, and then turn him over to society capable of enlarging and beautifying social life, and strong to share in and enjoy the life thus enlarged and beautified. To so develop in a whole nation the universal art instinct that its people may come into the inheritance which the world of nature and humanity holds for them is an unusual task, but it is too sacred to admit of a thought of failure. In a varying degree the art instinct exists in every rational individual, making possible the bringing of the whole people into this inheritance of the beautiful.

From the beginnings of the race the human soul has been slowly and unconsciously evolving its inner life of beauty along all the great lines of thought feeling and action, and the highest moments of this experience have been caught by art and preserved as an inheritance for the race in which it may the more fully and richly live and through which it may rise to fuller self-expression. None of the values wrought out by humanity and brought into the consciousness of the race has ever been lost. The supremest life of all these centuries of progress has

* Summary of an inaugural address before the Indiana State Teachers' Association, December 26, 1899.

been kept as the rightful heritage of every child of humanity.

Not all persons can have pictures, but nature is for all at all times, and to those who have been given a method of interpretation and expression,—those in whom the synthetic imagination has been developed, it will be a perpetual well-spring of happiness, a never failing source of joy. A high interpretation of nature requires an inner life made free through insight quickened by a cultured imagination. This insight must enter into the heart of nature and find there a looking and striving of the whole toward the service of the human spirit before all nature will seem beautiful. It will then appear as if disposed by some intelligent spirit within and its appeal will be made to the instinct of beauty in man. One equipped with a cultured imagination such as results from art interpretation and expression will be able to construct his own pictures from his natural surroundings and make them glow with the spirit within,—will be able to see temples and monuments in the woods, hills and mountains, and in field and stream and sky will be able to find landscapes of unlimited and ever-increasing beauty. Having built his temples and framed his landscapes, he can turn their grandeur, strength, and beauty back into his life as a larger means of culture and control. He will thus have within his own life a fountain of perpetual youth in which he may continually bathe and remain young in spirit.

Back of all art is the social life out of which it has risen and without which no art is possible. When the experiences of the social group are of such value as to create a desire for their preservation for further living—a desire to re-live and re-enjoy them—we have the motive for art production. Both the artist and his art are products of the social conditions of his time. The general desire for the reproduction of social experience brings the artist to the front. In a certain sense he is set apart for this special work. When the experience is reproduced, the social group accepts or rejects the production according as it does or does not adequately express the social experience. In this manner the artist is stimulated to express in the fullest possible way the most desirable experiences of the race. The race has continued to move forward in this way, ever rising to higher experiences and preserving the experiences by which it has risen. Art study will afford a method by which we may interpret the life behind the art. Understanding the life out of which art has sprung, there will come a higher appreciation of humankind and a larger desire to preserve the institutions by which the race has moved forward. The individual, feeling the pressure of eternal humanity behind him, will have a more exalted conception of the duties and destinies of mankind.

Thus far the effort of the public schools to bring the children into this inheritance of beauty has been confined chiefly to school room decoration. There should be naught but praise for the teacher who makes beautiful the room in which she teaches. The general tone of the schoolroom will sink down into the deepest life of the child, giving color to his thought and feeling, and long after the lessons of the text have been forgotten the silent influences of that room will come to expression in his daily experiences. The gentle power of beauty must ever enter into and become a part of the life that lingers in its presence. But contemplation of art will neither make artists nor interpreters of art except as contemplation leads to action. The child is educated less through what he sees than through what he does. There is great hope for a boy when he lays his hand to a piece of work—sets himself some task that will not only arouse the forces of his life, but will afford an opportunity for organizing and expressing these forces when aroused. Then he will give the best and fullest expression of himself and at the same time will be fixing within himself a set of high habits that will be to him a constant source of strength and joy. It is only when the child strives to express himself in terms of the beautiful that he grows most toward beauty.

Art will never reach the whole people until in some way it is made to enter into the serious questions of practical life. Science owes its development and present standing to the fact that it allied itself in a helpful way with the practical living of humanity. Whenever in the forward movement of the race a new problem has arisen, the need for its solution has brought out those best qualified for the work in hand. Art must be made to contribute to the solution of some of the problems of daily living before we can hope to have it appeal to the masses. During the centuries of effort the

race has wrought out the method of its own progress. In general there is safety in relying upon the method by which the race has been able to solve the problems of its own existence and growth. Around the question of living the human family has ever marshaled its most earnest effort and its highest thoughts and feelings. Along with the expression of the human soul as forced by the needs of life, the elements of beauty have been evolved. The individual and the race must ever advance through the solution of the problems that arise out of their daily experiences and cluster about their daily living. With art brought into life as a means by which some of the problems of living may be solved, the thoughts and efforts of the people will be turned toward it because of what it offers to every-day experience. There will be a demand for better art and art training. This demand will bring to the front those most gifted in art conception and expression as times of war bring out those best fitted by nature to command in battle.

The child must not only be a beholder, but a producer of art if he is to come into the fullest appreciation and enjoyment of the beauty embodied in art forms. All achievement must be interpreted in terms of effort—quantity and quality. To get a proper sense of values one must find in terms of his own experience the kind and amount of life involved in the work. Whenever the individual attempts to marshal and coordinate the forces of his own life so as to express his conception of the beautiful, he will sense the value of the artist's power, and at the same time discover his own limitations, and the problems presented will call for greater effort.

The basis of art culture exists in the longing in all child-life to go out after the beautiful. This instinct may and should be utilized in performing the daily tasks of school life to bring the children now, and ultimately the whole community, to fuller interpretation and expression. Art should be made to serve every task of the school and thus assist the child in the solution of his problems and that in a joyous way. The child will thus be given a method which he may carry over into the practical affairs of adult life after the school has finished its work.

Between the child and his heritage there must come a mediator who is skilled in expression and filled with the spirit of beauty —one who will open the gates of beauty and lead the children by the joyous way of discovery into the land of the beautiful which is theirs by right of birth. We must have in the schoolroom a teaching artist who is capable of leading the children to ever higher expressions of the unfolding beauty within, that in the beauty around and above them they may constantly discover the beauty of their own lives and that out of it they may ever construct larger and richer experience.

HOW TO USE THE NEW GEOGRAPHIES.—IV.

By CHARLES R. DRYER.

A GOOD text-book is both a store-house of information and a guide which the student may follow in the attempt to gain possession of its contents. Ordinarily the text-book can show but one road to knowledge, the one which the author thinks, on the whole, the best. But truth is many-sided and there are many different ways of looking at it, each of which may show some new relation or an old relation in a new light. The resourceful teacher is never content with presenting one view of a subject: he cannot know just how it will strike any individual pupil. The more varied the manner of presentation the greater the chance of reaching some mind clad in the armor of incompetence or indifference. If the teacher could always know exactly the state of mind of his pupil, he would know how to awaken interest, remove obstacles and insinuate the antitoxic and antiseptic serum of intelligence. The ordinary text-book of geography for the grades aims to present a large number of facts about the various parts of the earth which the student is expected to learn and remember. Very lit-

tle attention is paid to the development of general principles. Perhaps facts *and* principles cannot be given in the space of one book or learned in the few years of grade school life, but one principle is worth a thousand facts because it includes the facts and gives them meaning. This paper is an attempt to extract from the facts given in our new text-books some general principles in regard to rivers.

We examine first the topical indexes which precede the text in each book and find under the general head, "Rivers," only a few references and those to the most simple and elementary facts about rivers. There are no sub-headings which refer to all the individuals of that class as there are under "Lakes." We might go through the whole index and look up all that is said about all the rivers, but we are inclined to postpone this undertaking and to take up for present study a few examples of known interest and importance.

The Mississippi and its tributaries must furnish a great variety of conditions and features, and may be used as a pattern with which to compare other rivers. The Introductory book, page 8, gives a map of the system free from all confusing complications. The maps on pages 36 and 90 enable us to locate the system upon the surface of the land. A pencil line upon the map, run around close to the heads of all the streams tributary to the Mississippi will mark out the divide which borders its basin. This turns out to be on the west the Rocky Mountains and on the east the Appalachian Mountains, but on the north there is no perceptible elevation to separate it from the Great Lakes and the basin of Nelson River. The large maps on pages 26-7, 34-5, 151, 155 and 159 of the Advanced book do not throw any new light upon the subject. In fact, the northern divide would be, for the most part, imperceptible to the traveler who should seek to follow it across the country, and could be determined only by the direction in which the streams flow.

From these maps it may be seen that the farthest source of the Mississippi is in the mountains near the Yellowstone Park, and that the main stream of the system is the Missouri-Mississippi which flows southeastward along a line near the middle of the basin. Its principal tributaries on the west, the Yellowstone, Platte, Arkansas and Red rise in the Rocky Mountains and flow down the long slope of the Great Plains. The other large tributaries are the upper Mississippi from the north and the Ohio from the east. These streams divide and sub-divide into smaller branches and twigs until the whole system looks (see Introductory, p. 8) like a great, spreading, somewhat one-sided tree. By using the scale on the map (p. 26–7 Advanced) we may learn that from the foot of this tree to the topmost twig the distance is 1,800 miles. As the river flows it is more than 4,000 miles. The rainfall map, p. 129, accounts for the abundant development of branches and twigs in this drainage tree. The rainfall is more than twenty inches per year (one-half the rainfall of Indiana) over all the basin except the western part. There the large rainfall in the Rocky Mountains makes up for the deficiency on the Great Plains. All the long western tributaries are fed chiefly from the rains and melting snow in the mountains and as they traverse the dry plains they lose so much water by evaporation that in summer they actually grow smaller toward their mouths. The basin of the Missouri is three times as large as that of the upper Mississippi, yet the volume of the two rivers at their junction is about equal. The basin of the Ohio is one-half as large as that of the Missouri, yet it contributes twice as much water to the trunk stream.

Some idea of the character of the valley and the scenery in various parts of the stream course may be obtained from the pictures on pages 24, 30, 44, 47, and 49. We get there little glimpses of the mountain peaks, valleys, gorges and cataracts which are characteristic of the head waters, and of the long, apparently level stretches of the plains crossed in the middle course. The valley of the Ohio resembles that of the Rhine shown on page 14 of the Introductory. The great limbs unite at the southern end of Illinois to form the trunk stream of the lower Mississippi described on page 51. The floods there mentioned extend up all the limbs, but are especially notable in the Ohio where, on account of the narrow valley, the water sometimes rises seventy feet above its lowest level, and submerges all the farms and towns between the bluffs.

Introductory page 102 and Advanced page 154 show how this river system is utilized for commerce. The channel of the Missouri is too changeable and choked with mud to be of much value for transportation, but the

upper Mississippi and the Ohio are great highways by which the grain and lumber of the north, and the coal and iron of the east reach the central region of the United States. In spite of the inconvenience of a waterway whose depth and level varies from five feet to fifty feet, boats and landings have been adapted to these conditions, and large cities have sprung up at important points on this commercial route. Pittsburg stands at the head of the Ohio, Cincinnati midway of its length and at its northermost bend, and Cairo at its mouth. At the head of the Missippi are the twin cities of Minneapolis and St. Paul, and at the mouth of the Missouri is St. Louis, the commercial, as well as the geographical, center of the system. New Orleans is the sea-port toward which all these converging routes lead, the point where cargoes are transferred between the river boats and the great ocean vessels. The river steamers are built very broad and flat on the bottom so that they can float in shallow water. It is an old saying that a Mississippi steamer can run on a heavy dew. Their carrying capacity is often enlarged by lashing to their sides and front a number of low, flat barges or floating boxes, so that one steamer can transport, in addition to the cargo piled on her own decks, thousands of bushels of grain or tons of coal. The channel of the lower Missippi is so crooked that navigation is slow and difficult, and the lines of railroad which have recently been built parallel with the river (see map) are taking a large share of the business, so that the importance of the Mississippi as a commercial route and the volume of traffic upon it have, in late years, greatly diminished.

The Mississippi system may be taken as a type of great rivers, and from a detailed study of its features many general laws may be discovered which apply to most of the great rivers of the world.

1. Great river systems have their sources in elevated and mountainous regions, where the slope is very steep, the current swift and broken by numerous rapids and cataracts, and the valleys are deep and narrow with precipitous sides. Their headwaters may drain numerous lakes. (See map of Minnesota.)

2. The region about their headwaters is not adapted to agriculture but may furnish large supplies of timber and minerals; such as coal, iron, gold, silver and copper. Here water power is most abundant and valuable, and manufactures may be extensi vely carried on; as flour at Minneapolis, a nd iron, steel and glass at Pittsburg.

3. In the middle course of great rivers the valley is broad, the slope more gentle with few falls or rapids, the country traversed adapted to agriculture or grazing and the river a great highway of travel and commerce.

4. In the lower course of great rivers the alluvial valley is very wide and low, the slope gentle, the current sluggish and the stream shallow and crooked. The land in the valley is extremely fertile and produces crops, like sugar cane, rice and tobacco, which cannot be raised so well elsewhere; but it is subject to the danger of frequent and disastrous floods. In this region navigation is carried on, but under peculiar difficulties.

5. The delta at the mouth of a great river does not furnish a good site for a seaport or easy communication between sea and land. The river vessels cannot go out to sea, nor can the ocean vessels ascend the river very far.

6. Rapids or falls which furnish water power (Minneapolis), the head of navigation (St. Paul), the junction of large branches (Pittsburg, St. Louis, Cairo), and other points of vantage in a great river system are the natural sites for large cities. The point of transfer from river to seagoing craft is generally a delta city situated at the point nearest the mouth where the land is high and dry enough, or at the farthest point up stream accessible for ocean vessels (New Orleans).

7. In the exploration and settlement of a country the streams furnish the best routes for travel and commerce; the population enter that way and settle at first near the streams, gradually spreading thence up the small tributaries and back toward the divides. The people, the towns and the houses stand with their faces to the river. As the country is improved, and roads are built, and especially as railroads multiply, the rivers become of less and less importance, the volume of traffic diminishes, and there is a tendenency for the population to gather around other centers. (Look for examples of this in your own county.)

8. The volume of water in a river depends not only upon the area of its drainage basin, but also upon the amount of rainfall and the rate of evaporation in the basin.

PRIMARY.

EDITED BY

FLORA J. COOKE, Chicago.

SUGGESTIONS FOR WORK IN TIME AND THE MAKING OF VALENTINES.

For convenience, the work outlined below has been sorted out from an entire year's work and collated under the general heading above. It includes work in history, literature, science, geography and number, and each phase of it was suggested by some real or apparent need or interest of the children. For instance, during the first part of the year came the necessity for learning to tell time by the clock. It was assumed after discussion with the children that no child would be tardy and disturb the entire class daily, if he could avoid it, and, that he might no longer have to depend upon the older people in the house for what *he* was perfectly able to do, the school offered him the opportunity of learning to tell time for himself. However, few lessons needed to be given directly to this end, for after the desire to know how was awakened the power was soon acquired by the constant, spontaneous experimenting of the children.

While they were learning to tell time by the clock, they were encouraged to devise simple substitutes for it, and were told stories of the inventions of other people for this purpose, and given respect for their own efforts by finding out how many things had been tried before any one thought of the modern clock.

The children tested, for convenience, many of the primitive methods of telling time; as, the the Indian way of counting by bundles of sticks, notches in boards, trees, etc. They made candles, and measured time according to King Alfred's plan. They constructed a clepsydra or water clock, as follows:—Through an opening in the horizontal arm of an upright wooden standard, a glass tube, drawn to a fine point at one end, was allowed to pass down, vertically, into a cylindrical graduated glass jar. The jar contained a piece of free cork, and as the tube was fed from above with water, which escaped from the pointed end drop by drop, the cork rose in the jar, mark by mark, thus measuring the time.

SAND-GLASS.

They also made a three-minute sand-glass, which was protected by a simple wooden frame. For this purpose they heated the middle of a glass tube in a gas flame and drew it out until only a small even opening was left in the middle of the tube. They then filled one end with fine sand, corked the ends, and experimented and corrected until they found the exact amount of sand which would run through in a given time—in this case, in three minutes. They afterward used this measuring glass for many purposes, of which the following is an illustration:

NOTE.—*Work associating by action and observation, ideas of time, distance and direction.*

From the fact that the children from the greatest distance often arrived too early, while those nearest the school often came too late, and from various other suggestions, grew the plan of making a pictorial map of the school district and finding out where each child lived and what time he should start for school in order to make the trip with ease. The first plan was worked out upon the blackboard. The school house was first placed in the proper position, the streets being represented by parallel lines and the whole plan drawn to the scale of six inches to a block. After some observations each child represented his own house upon the map, showing its direction from the school and the exact number of blocks it was from it. He also indicated by a dotted line his daily route to school. The children were allowed to take the three-minute glass home, reckoning and reporting how long it took them to walk the fixed distance. As this exercise was repeated several times for the sake of accuracy, there was much incidental exercise in the necessary number processes. Each child told how many times he turned the glass and gave his result, which the class criticized or verified. They found out in an out-door game the average time required for walking a block and taking three minutes as the standard the children determined the length of time necessary for their daily trips to school. As several children came upon street cars and trains the different rates of travel per mile were estimated and compared. Several old games; as, Puss in Corner, etc., took new form and aided the children in orienting themselves with ease, while other games stimulated observation of their surroundings. For example, one child closed his eyes and described certain trees, houses, etc., which he must pass if he traveled in a certain direction, and the other children told what path or street he was thinking of.

After several experiments the children appreciated the advantages of a clock or watch, and the clockfaces made by them and carried home, each indicating that its producer knew exactly the latest time he could leave home in the morning or at noon, had a much stronger effect upon the habits of promptness of the class than the same number of 'Tardy Notice Blanks' during other years. It means simply, that few mothers are proof against any strong rational desire of children even when tested to the extent of an earlier breakfast or lunch. The above exercise was, of course, merely a device but its roots were grounded in a fundamental principle. Again it was not *one* immediate result that was sought but the cultivation of a class 'good will'—an attitude of unconscious responsibility which should reach in every direction. The result, itself, might have been much more quickly obtained; for, truly, though tritely, "Where there's a will there's a way," but the teacher's *will* acting alone, always makes a way that is hard and long for all concerned.

SUN DIAL.

In September or March when the days and nights are equal in length, and we get the mean shadow line of the year the children have constructed sun dials. The first one was a small model of a most primitive instrument—a hollow hemisphere of clay, baked dry in the sun or a kiln, with a needle extending straight up from the middle point to about two inches above the rim of the clay cup.

After visiting the beautiful flower sun dial at South Park they constructed and used a simple one on the school grounds as follows: They placed in the ground a vertical pole with an arm swinging freely to the north and south. With this arm they sighted the sun exactly at noon, and marked its direction upon a piece of white paper fastened to the pole. (The angle made with the vertical corresponded with the latitude of Chicago, 42°.) Later, in a *higher grade*, the children with these data constructed a fairly accurate sun dial,—a gnomon of wood, base 4½ inches, corresponding to the radius of the circle to be used. Upon a horizontal board they made their circle 9 inches in diameter. They then found north and south by the streets or corrected compass, located the gnomon and marked, by the shadows it cast, the lines for the hours from 9 A. M. to 4 P. M. Each child took his sun dial home and its value was tested by the questions which it suggested as he watched the shadow line changing while the days grew shorter or longer. The work suggested for February in this connection might be utilized by the teachers who expect to have a valentine box.

VALENTINES.

No. 1. A calendar—Materials: The back ground of the calendar may be made of cardboard differing in color, size and shape according to the taste of the child. The leaves of the calendar itself, of thin white paper (about 3½x2½ inches) ruled into ½-inch squares with the printed names of the days and month neatly pasted in place. The cardboard may be decorated with a simple design in water-colors or with scrap pictures. The children should do all the planning and making as independently as possible. Knowledge gained incidentally in this work: (1) number of days in week, number of weeks in a month, and that the days differ in number each month. (2) How to make correct, or at least intelligible figures; for not until the figures are fairly well-made upon the blackboard should the children be allowed to begin to place them upon the calendar.

Incidental Problems: If we have a one-half inch square for each day, how long will our sheet of paper need to be? Seven and one-half inches. We have to plan for five spaces for the number of weeks. How wide will our sheet need to be? Five and one-half inches, etc.

*Suggestion for Valentine No. II.**

Tools: Paste, brush, scissors, ruler and pencil.

Materials: Card-board 4x6 inches,, pink lining 4x6 inches, parchment paper 4x6 inches, heavy paper 2½x3½ inches, five fasteners and water colors.

Directions: Two inches from the top of the parchment paper and ½ inch from the right edge place a point. From this point to the left, draw a rectangle 2x3 inches. Cut on lines. Cover card-board with lining paper. Take the heavy white paper 2½x3½ inches. On this draw a calendar for February whose dimensions are 2x3 inches. This may be fastened with fancy fastener 1¾ inches from the top of the card board and ¼ inch from the right edge. Fasten the parchment to the card-board at the four corners with fasteners. Decorate the upper left corner with any little sketch or some words as "To my Valentine."

Cost of materials for class of forty, $1.50.

ENVELOPES.

I. Allow the children to plan out and make envelopes for their valentines. (1) One for the calendar.—Each child can make an original pat-

*Found with others in F. Bartsch's book of construction work.

tern; compare the patterns. *Question.*—Which takes the least material? How can it be made better? prettier? (2) Envelopes for the other valentines.—The plans should each time be made first by the children upon the blackboard or a piece of newspaper.

II. Make three boxes exactly alike. Dimensions in inches, 4x2½x1. Cover the front and back of the boxes with tinted paper. Place the boxes one above another and put a piece of cardboard the width of a shelf between them. Cut out a rectangular strip of cardboard three inches wide and long enough to go entirely around the boxes, leaving only their fronts and backs exposed. Bind the ends of the strip together with cloth, also strengthen the corners with it. Cover with the paper. Put the shelves in their proper places in the bureau and use the boxes as drawers. A loop of ribbon may be fastened for a handle upon the front of each drawer, or a button or a hook and eye, or anything typical of what the drawer is to contain.

Envelope No. I.—Dictation.

NOTE.—To be put into the child's hand and worked out by him without suggestions from the teacher.

Take the manilla paper.

Draw a rectangle 10 inches long and 6 inches wide.

On the 10-inch lines, 1 inch from each corner, place a dot.

Connect the opposite dots with lines.

Call one 6-inch inner line, line *A*.

Call the other 6-inch inner line, line *B*.

Extend line *A* 3½ inches to the right.

Envelope No. II.

NOTE.—Too difficult for first grade reading.—Teacher should help in the *reading* but not in the work.

Draw a rectangle 6 inches long and 4 inches wide.

Call one of the 4-inch lines, line *A*.

Call the other 4-inch line, line *B*.

With diagonally drawn lines find the center of the rectangle.

From the center, draw a line 6 inches to the right which shall bisect line *A*.

Call the end of this line point *C*.

From the center draw a line 6 inches to the left which shall bisect line *B*.

Call the end of this line point *D*.

From the center draw a 4-inch line which shall bisect a 6-inch line.

Call the end of this line point *E*.

From the center draw a 4½-inch line which shall bisect the other 6-inch line.

Call the end of this line point *F*.

With slanting straight lines connect point *C* with the corners of the rectangle nearest to it.

With slanting straight lines connect point *D* with the corners of the rectangle nearest to it.

Extend line *A* ½ inch beyond the rectangle corners.

Extend line *B* ½ inch beyond the rectangle corners.

With slanting straight lines connect point *E* with the ends of these lines nearest to it.

With slanting straight lines connect point *F* with the ends of these lines nearest to it.

Cut out the figure you have drawn.

Fold and paste neatly into envelope form.

LITERATURE.

In all of their work the children have been encouraged to give their own ideas concerning the things observed; as, day and night, darkness, change of seasons, etc., and stories, sun myths, songs and poems have been selected to aid them in comprehending and enjoying each phase of the work. Of course, many of the stories have done more than amuse or instruct the children. The following places Valentine's Day out of the reach of rude jokes and gives it its original atmosphere of kindness and good will.

A STORY OF ST. VALENTINE'S DAY.

By ANNE E. ALLEN. (With permission.)

There is an old legend that runs in this wise.—

A long, long time ago there lived in France a priest who was the friend and confidant of all children. They came to him with all their troubles, sure of his sympathy and interest, no matter how small their troubles seemed to be. Their prayers were told him and they learned from him the form of their childish petitions. The fame of his gentleness and kindly interest in the 'wee folk' spread far and near, and the children came to him in such numbers that he had'nt the time to settle all their little difficulties and disputes.

Seeing this and feeling sorry that any child should go away from him uncomforted, he asked them to write out all their little petitions and send them to him unsigned saying he would burn them and the smoke would carry the little message to its destination.

Sometimes these notes were messages of love and gratitude to their kind friend. After a while the good man died and it became a custom for the little children to send tokens of love to each other on his birthday, February fourteenth.

They sent them unsigned, and to this day the same custom is observed.

COMPOSITIONS FROM HAWAIIAN SCHOOLS.

CHINESE PEOPLE.

The home of the Chinese people is in China, a country in the southeastern part of Asia. There are many classes among the Chinese people who do not speak the same language. Our girls are either Punti or Hakka. Sometimes they help each other.

The Chinese people like to live in China because their fathers and mothers were born there. Some of the people came here to work and earn money.

SEONG, AH SHIN, 15 years.

HOMES.

The Chinese build their houses in rows and many families lived together. Some rich people had brick houses and some had stone houses.

Many of the Punti ladies have lattice in front of the house, so that the men can not see them.

Some of the homes have pictures to hang and some do not.

The beds are made of board with one bench on each end. Each bed has a woolen blanket and a white sheet on top of it. The mosquito-net is square. It is made of thin white cloth. On the upper part there are two bamboo sticks to hold it up. NYET YUN, 13 years old.

FOOD.

The principal food of the Chinese is rice. First we put some rice in a sauce-pan and then put some water in it to wash it clean before we put it on the stove. When the rice is soft, we know that it is cooked. Some other foods are pork, beef, vegetables, chickens, and ducks. We eat three times in a day. In the morning we eat rice, at noon, bread, and about four or five in the afternoon rice again. All the family eat together at the same table. All the vegetables put in one dish. We use tin spoons and others Chinese spoons. Our chop-sticks are long, slender sticks, square at the top and round at the bottom.

LYU, KUI TAI, 12 years.

DRESS.

The Chinese men wear a white garment under, and then a black coat outside. At Chinese New Year some rich people put on long trousers, Chinese hats, and put down their queus. In cold weather a man sometimes put a vest under, and sometimes put it outside.

The boys wear their dresses almost like the men, only the boys have short trousers. The men and boys generally wind up their queus about the head.

The women do their hair up when they are married. They wear high shoes and take an umbrella with them when they go out.

The girls comb their hair with a comb, and sometimes brush it with oil. They put something sticky on their hair to make it shine.

HO, KIM FUNG, 13 years.

WORK.

The rich Chinese men have stores and hire men to work, and a man to carry the goods.

Some men do the cooking for the white people. Many men work in the laundry to wash and iron other people's clothes. Other men work in the yards, and some, if they do not know the English language, work in the rice fields.

The women stay at home to take care of the house.

They cook the food, sew the clothes, and help to look after the shops.

The children must help the parents to do the work, and sometimes take care of the babies. If they have spare times then they go to play.

CHING LAN YIN, Age 14.

CUSTOMS.

When the Chinese baby is a month old, the mother gives a party. She shaves the baby head. So that when they get older they will not have gray hair.

The girls carry the babies on their backs. They use a cloth with four ends which cross in front and tie at the back. They cannot sit down on the chairs, but must stand or walk. The girl sweeps the floor and does hard work. She must obey her father and mother and also all their friends.

When a girl is eighteen or nineteen years old she marries. She cannot see the man, but the man sends his picture for her to see. If she does not like to marry that man her father tells the man that she do not want to marry him. Then the father said to her that she need not marry.

The girl does not dress her hair in the same way as the lady. The lady does it up in a knot and puts many gold pins and some flowers in it. The girl lets her hair hang in a braid. If her hair is short she may braid longer with some silk threads.

Many of the Pun-ti girls and women have bound feet. If they marry and are rich, they may buy a slave to do their work.

PUNG, EN SU, 11 years.

AGOONACK.

I.

Our little sister Agoonack,
Lives in the land where Frosty Jack,
Piles up mountains of ice, and snow,
Never stopping to let them go
Until the great big round, red, sun,
Laughs at the thought of spoiling his fun.

II.

He sends his rays so warm and clear
That little Jack sneaks away with fear.
He goes to the north-land, far away,
Where none can hinder his frolic and play,
and builds for himself a great Eglo,
Frosted and frescoed, his palace of snow.

III.

There the Northern Lights rise and swell,
And mount up high and seem to tell,
As they send their flame of glittering gold
Over the ice peaks gray and cold,
That God has made a light to show,
The shining, sparkling, glittering snow.

IV.

Sometimes in rosy streams they're shown,
As if each had a life of its own;
Marching in file like soldiers grand,
Then uniting hand in hand,
In one great stream of flame they rise,
Till they reach the dome of the vaulted skies.

V.

Agoonack now can enjoy the sun,
And the flowers that peep up one by one,
The icy coat from the streamlet breaks,
And like a snow storm, in feathery flakes,
Beautiful birds in great white flocks,
Come and settle among the rocks.

VI.

A safe retreat they seem to be,
These rocks that tower above the sea;
But the Eskimo, with his curious net,
Out on the slippery rocks will get;
And as the birds go flying past
He catches enough for a rich repast.

VII.

And the good reindeer, while Jack's away
Has come up with Agoonack to stay.
It gathers the mosses from under the snow,
The sun can't melt it all, you know;
And gives its milk so nice and sweet,
To Agoonack and Sipsu to eat.

VIII.

The seals swim in the waters clear,
And the walrus plays with her baby dear,
The old men sit, and laugh and sing,
And tell of many a wonderful thing.
Their stories are told or sung 'tis said;
But they're never written, never read.

IX.

The children love the sun's bright rays.
He shines day and night these summer days.
It's a merry happy life one lives,
While God the blessings of sunshine gives,
But soon the sun will slip away;
Leaving Agoonack in darkness to stay.

X.

And how Jack laughs to see him go
And back he comes, with his ice and snow,
Agoonack again will have to wear,
A dress and a hood, of the fur of the bear.
She will eat his flesh as candy we do;
And so will dear little friend, Sipsu.

XI.

But on the ice they can run and slide,
And they'll have many a merry ride,
With puppies for horses, and the deer
Will do for cow or horse out here.
They will be happy, kind, and good,
To papa and mamma as children should.

XII.

These children love with a love as true,
As dear little children more favored do.
They pray to the good All Father above,
And thank Him for all His kindness and love,
Then let us remember though favored are we
Our sister dear near the frozen sea.

XIII.

God the Father of me and you
Is Father of little Agoonack, too;
He has fitted us all for the life we lead,
And given the blessings He sees we need,
In temperate clime or in torrid zone
The same kind fatherly care is shown.

—RACHEL C. CRETCHER.

MATHEMATICS.

EDITED BY

ROBERT J. ALEY, Ph. D., Bloomington, Indiana.

HISTORY OF ARITHMETIC.

XVIII.—NOTED ARITHMETICS.

Cocker's Arithmetic.—For many years arithmetical disputes in England were settled by an appeal to Cocker. The disputant who could show that his view was '*according to Cocker*' was at once given the palm of victory.

A very careful examination of the work fails to show any good reason for its remarkable ascendency. DeMorgan says, "The famous book looks like a patch-work collection, and, I believe, is nothing more. The reason of its reputation I take to be the intrinsic goodness of the processes in which the book has nothing original; and the systematic puffing with which it was introduced."

Like many books of its time, it opens with a full page woodcut of the author, beneath which the following lines are printed:

"Ingenious *Cocker!* (Now to Rest thou'rt Gone)
Noe Art can Show the fully but thine own.
Thy rare *Arithmetick*, alone can show
Th' vast sums of Thanks wee for thy Laboure Owe."

The book purposes to be "A plain and familiar Method, suitable to the meanest Capacity for the full understanding of that Incomparable Art, as it is now taught by the ablest School-Masters in City and Country."

The book first appeared in 1677, and during the next fifty years many editions were printed. The editor is John Hawkins, Writing-Master, who claims to have received the manuscript from Cocker. Cocker was a writing-master and engraver, and practically unknown in the field of mathematics. DeMorgan is strongly of the opinion that the book is a forgery, and that Hawkins compiled it from the best arithmetics of his time, using Hodder as a model.

The opening chapter on notation gives, in a very verbose style, definitions of arithmetic, number, fractions, decimals, etc. The first definition is a fair sample of all. "Arithmetick is an Art of Numbering or Knowledge, which teacheth to Number well, (viz.) the Doctrine of Accounting by Numbers. And there are divers Species and Kinds of *Arithmetick* and *Geometry*, the which we do intend to treat of in order; applying the Principles of the one to the Definitions of the other."

Some facts given in compound numbers are curious and instructive. "The least Fraction or Denomination of Weight used in England is a Grain of Wheat gathered out of the middle of the Ear and well dried." The table for Troy Weight begins "32 Grains of Wheat make 24 Artificial Grains; 24 Artificial Grains make 1 Penny-weight." "The least denominative part of Long Measure is a Barley-corn well dried, and taken out of the middle of the Ear; whose Table of parts followeth:

The Table of Long Measure

3 barley-corns		1 inch
12 inches		1 foot
3 feet		1 yard
3 ft. 9 in., or a yd. and a quarter	make	1 ell English
6 feet		1 fathom
5 yds. and a half		1 pole, perch or rd.
40 poles or perches		1 furlong
8 furlongs		1 English mile."

The definition of multiplication is rather curious, but in the main, sound. "Multiplication is performed by two Numbers of like kind for the production of a third, which shall have such reason to the one, as the other hath to a Unit, and in effect is a most brief and artificial compound Addition of many equal Numbers of like kind into one Sum."

In division, Cocker cuts loose from the old Galley method and introduces practically our modern form. This one advance step contributed greatly to the popularity of the book. The single and double rules of three, both direct and inverse, for integers and fractions, have the usual full treatment. Alligation, exchange and single and double position come in for a full share of space. The number of unsolved problems is quite small. Although decimals are defined, their treatment is reserved for a separate book. The book closes with—"*Laus Deo Soli.*"

SHORT CUTS.—II.

SUBTRACTION.

If the addition table is mastered subtraction follows as a matter of course. Perhaps the best way to subtract is by adding; that is, by seeing what must be added to the subtrahend to produce the minuend. This method closely relates subtraction to addition. It is the method always used by the expert cashier, and the ticket agent at the circus. It is what experience has found to be the line of least resistance. If 7 is to be

subtracted from 16, instead of thinking it as subtracted, think what must be added to 7 to make 16. Here, again, as in addition, the royal road passes through effort, drill, drill and drill.

Subtraction of two columns at once can usually be easily effected if a little care is given to systematic grouping; e. g., 83—57, this is readily seen to be equivalent to 86—60 which is easily seen to be 26. 87—43=84—40=44. These are sufficient to show the general plan. The teacher who believes in such work will have no trouble in working out further details.

MULTIPLICATION.

1. Know the multiplication table. This is the short cut *par excellence*. Many young people get through the grades and the high school and into college without having a good working knowledge of the multiplication table.

2. To multiply by 10, 100, 1,000, etc., annex 0, 00, 000, etc. This is so obvious and so generally given in elementary books that it would seem that every one should know and practice it. And yet the writer has in his classes every year young people who laboriously multiply out all such examples.

3. To multiply by numbers which are aliquot parts of 100. Learn the following table of parts:

25=¼ of 100.	8⅓=1/12 of 100.
50=½ of 100.	16⅔=⅙ of 100.
33⅓=⅓ of 100.	6⅔=1/15 of 100.
75=¾ of 100.	6¼=1/16 of 100.
12½=⅛ of 100.	66⅔=⅔ of 100.

To multiply by any of the above numbers, annex 00 to the multiplicand and take the part of the result indicated by the corresponding part of 100; e. g., 25×84=¼ of 8400=2100, 8⅓×168 =1/12 of 16800=1400, &c.

4. To multiply any two numbers between 10 and 20. Take the units of product of the units for the units figure, the sum of the units plus the amount to carry for the tens figure, one plus the amount to carry for the hundreds; e. g., 16×19. 6×9=54; write 4. 6+9+5 (carry)=20; write 0. 1+2 (carry)=3. Hence, 16×19=304. By a little drill an ordinary school boy will become very expert in doing this.

5. To multiply together any two numbers less than 100 and each ending in 1. The right figure of the product is 1, the tens is the sum of the tens, and the hundreds is the product of the tens plus the amount to be carried; e. g., 91×61. Write 1 in units place. 6+9=15; write 5 in tens place. 6×9=54; 54+1 (carry)=55. Hence, 91×61=5551.

6. To multiply by eleven. Write the units for the units of product, add the units to the tens for the tens, the tens to the hundreds for the hundreds, and so on; e. g., 11×36549. Write 9 in units place.

9+4=13; write 3 in ten's place.

4+5+1 (carry)=10; write 0 in hundred's place.

5+6+1 (carry)=12; write 2 in thousand's place.

6+3+1 (carry)=10; write 0 in tens of thousand's place.

3+1 (carry)=4; write 4 in hundreds of thousand's place.

Hence, 11×36549=402039.

If the number to be multiplied consists of two figures only, write their sum between them for the product; e. g., 11×69=759, which is 15 written between 7 and 9.

7. To multiply by 9, 99, 999, 9999, etc. Annex 0, 00, 000, 0000, &c., to the multiplicand and subtract the multiplicand from the result; e. g., 99×8765=876500—8765=867735.

8. To square a number ending in 5. Multiply the part of the number preceding 5 by one more than itself, and annex 25 to the result.

$(45)^2$. 4×5=20; annex 25 and the result is 2025.

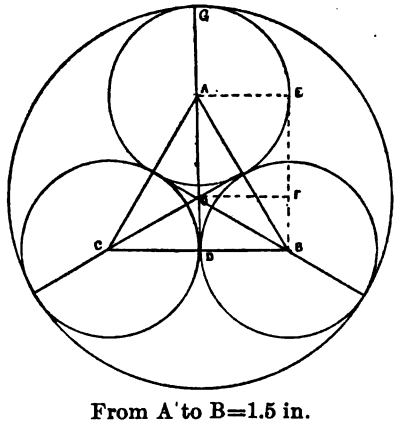
125^2. 12×13=156 annex 25 and the result is 15625.

SOLUTIONS.

Under this head we will give the solutions to some of the knotty problems of the new *Indiana Advanced Arithmetic*. Problems of interest from other sources will also be included. Persons having questions or solutions should send them direct to the editor of the department.

The following solution is good, and as it differs from the one before given we gladly give space to it.—[ED.]

Problem 29, page 327, *Complete Arithmetic:*



From A to B=1.5 in.

From B to D=.75 in.

$\sqrt{1.5^2 - .75^2}$=1.299+in.=distance from A to D.

1.299+in. ×.75 in.=.97425+sq. in. which equals the rectangle A E B D, also the triangle A B C.

.97425+sq. in.÷3=.32475+sq. in., area C O B, A O C or A O B, either of which is equal to the rectangle O F B D.

.32475+÷.75=.433+in.=D O.

1.299+in.—.433+in.=.866+in.=O A, or from the center to either A, B or C.

.866+in.+.75 in.=1.616+in.=radius.

2×1.616+in.=3.232+in.=diameter.

ARTHUR D. LEGG.

Problem 35, page 327.

How much must the diameter of a 36-inch grindstone be reduced, to reduce the weight one-fourth? (No allowance for the opening.)

We must suppose the grindstone of uniform thickness and uniform density. The problem is then reduced to this: "How much must the diameter of a 36-inch circle be reduced, to reduce its area one-fourth?" Circles are to each other in the ratio of the squares of their diameters. We then have the following proportion: The whole stone : the reduced stone :: $(36)^2$: diameter squared of reduced circle, or 1 : ¾ :: $(36)^2$: (diameter squared of reduced circle.)

Diameter of reduced circle=$\sqrt{¾ \times 1296}=\sqrt{972}$ =31.17+.

36 in.—31.17 in.=4.83 in. reduction in diameter.

NOTE.—The above problem might be solved in this way:

Area of 36-inch circle=3.1416×18^2.

Area of reduced circle=¾ of $3.1415 \times 18^2=3.1416 \times 243$.

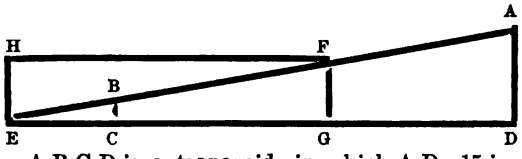
Radius squared of reduced circle=$\frac{3.1416 \times 243}{3.1416}$ =243.

Radius of reduced circle=$\sqrt{243}$=15.58+

The diameter of reduced circle=2×15.58+ = 31.17+.

The answer in the book is wrong.

Problem 24, page 325.



A B C D is a trapezoid, in which A D=15 in. B C=3 in. and C D=12 ft. The problem is to find the place of equal section.

The area of A B C D=$\frac{(15+3)}{2}(144)$=1296 sq. in.

Let F G be the place of equal section; then, B C G F=F G A D=648 sq. in.

It is easily seen, if the triangle is completed as shown in the figure, that E C=3 ft.=36 in.

The area of E B C=$\frac{3 \times 36}{2}$ =54 sq. in.

Hence, the area of E F G=648+54=702 sq. in.

The rectangle F G E H=2×702 sq, in.=1404 sq. in.

A D=$\frac{1}{12}$ of E D, (for 15 in. is $\frac{1}{12}$ of 15 ft.) Hence, F G is $\frac{1}{12}$ of E G.

We may then suppose that the rectangle F G E H is divided by lines parallel to F G into 12 equal squares, whose length and breadth each equals F G. 1404÷12=117 area of one of these squares. $\sqrt{117}$=10.816 in.=F G the side of one of the equal squares. E G=12×F G=129.692 in. C G =129.692—36=93.692 in. 93.62 in. =7.81—ft.

In the above solution I have supposed the side C D to be perpendicular to the parallel ends. This is not necessarily true, but such a supposition greatly simplifies the problem. At best such a problem does not belong to arithmetic.

SOLUTIONS REQUESTED.

Problems 3 and 4, article 243, page 182, *Indiana Arithmetic:*

3. By what fraction of a day does the average Gregorian year exceed the true year?

4. In how many years will the excess in the Gregorian calendar amount to one day?

Problems 32 and 33, article 336, page 327:

32. A road two rods wide about a square field contains one acre. What is the area of the field?

33. A road two rods wide about a circular field contains one acre. What is the area of the circle?

[Send solutions to the editor, R. J. Aley, Bloomington.]

NOTES.

The answer to problem 16, page 326, *New Advanced Arithmetic* is incorrect. The answer given is the $\sqrt{2}$, which is the diagonal of a face of the cube. The answer should be $\sqrt{3}$ =1.73+.

The answer to problem 31, page 327, should be 58.8+ instead of 51.8. For the correct answer to problem 35, page 327, see the solution given above.

The answer to problem 19, page 252, should be 223.9+ instead of 312—.

The many friends of Dr. John B. Faught will be pleased to know that he has been promoted to an assistant professorship in mathematics in Indiana university. Dr. Faught is justly recognized as one of the strong and promising mathematicians of the state.

D. C. Heath & Co. publish two little books of great supplementary use to the teacher of ele-

mentary algebra. They are McCurdy's *Exercise Book in Algebra*, and Peterson and Baldwin's *Manual of Review* and *Test Problems in Algebra*. These books furnish ready to the hand of the busy teacher just such problems and exercises as are needed for review and drill work.

The teacher of mathematics will do well to remember the condition of the pupil, as set forth in the following from Mary Howitt:

"Give us light amid our darkness,
Let us know the good from ill;
Hate us not for all our blindness,
Love us, lead us, show us kindness;
You can make us what you will.

We are willing, we are ready,
We would *learn* if you would *teach*.
We have hearts that yearn toward duty,
We have minds alive to beauty,
Souls that any height can reach."

Mr. S. O. Roberts, one of the best known secondary mathematical-masters of England died recently. He was a Cambridge man, a scholar of St. John's College, and seventh wrangler in 1882. For the last eleven years he was mathematical-master in the Merchant Taylor's School. He was especially strong as a teacher, and was greatly beloved by his pupils.

Miss Powell, a graduate of the state normal, is teaching mathematics in the Rockport high school. She succeeds admirably in arousing enthusiasm among her pupils and thus getting from them the best work.

Professor Bryan and Dr. Lindley will take the arithmetical prodigy, Arthur Griffith, to the New Haven meeting of the American Psychologists. They will present papers giving the results of their study and observation of his powers.

SCHOOLROOM DECORATION.

By ALFRED M. BROOKS.

IT will be denied by none that the beauty of our surroundings, whether natural or artificial, has a marked influence upon our characters. The wide-spread movement for the decoration of schoolrooms testifies that the importance of this influence is being more and more appreciated as time goes on. It is a work with which all well-wishers of mankind must sympathize.

The choice of pictures or statuary for a schoolroom, should involve the exercise of great tact and discretion, for children and young persons cannot be expected to take any real interest in what they cannot readily understand, whether a work of literature or of art. Let them begin by looking at first-rate, but simple works of art; for, in becoming used to these, they will gain the power of understanding and appreciating the more complex. Therefore those pictures are good which tell a straightforward story; and before all, those which deal with animal and landscape subjects.

Drawings of landscapes and animals were but the accessories of art in the elder days, but for the past two centuries they have taken precedence of religious motives. Men have developed a love for nature, and come to feel that love of this world's beauty is good. They have turned from the contemplative life of the cloister to the active life of the world. In place of the pictures of saints and martyrs and heavenly visions, they paint forests, and the animals that dwell in them, and the sea, and the clouds of heaven. "The perfect beauty of all natural things is summed up in the angels' promise, 'Good will toward men,'" said Mr. Ruskin. Our faith in spiritual things is not less than that of the contemporaries of Fra Angelico. No! but we have developed our own peculiar manner of expressing it. The very fact proves the everlasting nature of the quality of faith. While the works of the masters of Italian painting (presently to be spoken of) should by no means be neglected, those branches of art which are essentially modern should receive the greater share of representation, because they have a direct bearing upon modern life which will be at once comprehended by the pupils. Animal and landscape art have received the impress of some of the noblest spirits of modern times.

Landscapes, which are full of human as well as divine interest; those which express the subordination of natural and brute forces to man's legitimate uses,—the "water-mill" of Hobbema, or the "yoked oxen before the plough", of Jules Breton,—as well as those which tend to impress the mind with the manifold goodness and grandeur of God's work,—Turner's scenes in the high Alps, or his fertile fields yielding an abundant harvest for man's support,—such pictures as these will compel the

attention of children and youths. These are subjects easily understood. They are part of the daily life of man. They come home to all with useful lessons and ennobling inspirations. They help those who dwell in natural places to appreciate their loveliness and benefits. They lead those who live in cities, and who are deprived of such blessings, to wish to know the health-giving country.

Landscapes there are, too, which show man's most splendid works of architectural and engineering skill: Claude's pictures of the ruins of Rome; Turner's pictures of the glories of mediæval Venice; Cuyp's massive tower of Dordrecht, seen rising in the distance, high above the roofs of the town, an emblem of faith in God and the brotherhood of man, in an age now long gone.

Photographs, and solar enlargements of photographs,[1] of important historical places and the great works of architecture in all ages, should be given a place in school room decoration: the Colosseum and the Arch of Titus; St. Marks and the Ducal Palace; Giotto's tower; the Cathedrals of Paris and Reims; Westminster Abbey (any view but that of the west front); the field of Waterloo, the Simplon Pass, or Mount Vernon.

Pictures of animal life should receive very generous representation, and none better are to be had than good photographs,[2] taken directly from the works of Edwin Landseer. His picture known as "Peace and War," in which sheep tended by children, are quietly grazing about some disused canon on a grass-grown earthwork, overlooking the sea, is one for the special delight of children.

Rosa Bonheur's animals deserve mention, though they are not so well calculated to teach lessons of endurance and fidelity as Landseer's; the virtues which animals possess in so high a degree and which make them our rightful companions and helpers. Kindness and gratitude to them cannot be too early instilled into the child's mind. The pictures of Edwin Landseer will do more in this way by example, than many hours of precept from the best of teachers, or the agents of the Prevention of Cruelty to Animals Societies.

Subjects of a theological character, even though painted by the greatest masters, should be excluded. The "Miracle of Bolsena" and the "Dispute Concerning the Sacrament," though the works of Raphæl, are utterly inappropriate for the schoolroom because they involve questions which are utterly inappropriate for the youthful mind.

The greater number of religious pictures should be excluded, especially those which have anything painful or awful in them. Crucifixions, Entombments and Last Judgments, though they be those by Tintoret, Titian, and Michel Angelo should find no place in any schoolroom.

Some religious pictures, however, are peculiarly appropriate for children. They are those which have little or no connection with dogmas and doctrines. First among these are the Madonnas, and especially those which include no other persons than Christ, the Virgin, and St. John. Of such are Raphæl's "Madonna of the Grand Duke;" John Bellini's "Mother and Child;" and Botticelli's lovely "Mary with Christ and St. John" in a rose garden. Second in this class of pictures are those which illustrate the more easily comprehended events of Christ's life: Correggio's "Holy Night;" Gozzoli's "Adoration of the Magi;" Angelico's "Flight into Egypt," and Raphæl's "Miraculous Draught of Fishes." Many others of a similar character might be mentioned. Fra Angelico's angels can never fail to give pleasure to old and young alike.

For more advanced pupils, those in the high school who have begun to study Greek and Roman history, some mythological subjects may be well had. The "Mount Parnassus" by Raphæl, for example, or Guido's "Aurora," or Sir Frederick Leighton's "Garden of the Hesperides." A few good plaster casts[3] taken from the best works of Greek sculpture will be found desirable. Such casts should as a rule be of the full size of the originals. Reductions are never wholly good. Individual slabs from the Parthenon freize, or the bas-relief's from the Temple of Wingless Victory are as fine as anything that can be obtained. Good reductions of the Venus of Melos are likewise obtainable.

Works of modern sculpture, and especially modern religious painting were best omitted entirely. The eighteenth and nineteenth centuries have not had the sort of faith which finds its highest expression in religious painting, and such pictures in our day are for the most part mockish or weakly sentimental. At best they are but imitations of the work of a bygone age.[3] If a man be an artist he will have a special message to deliver which cannot be expressed in the manner of his predecessors. Canova and Cornelius failed. They could not, nor can anyone successfully put new wine into old bottles.

Portraits, whether sculptured or painted, are

[1] Wm. H. Pierce & Co., Boston, Mass.

[2] Dunton & Co., Boylston St., Boston, Mass.

[3] P. Caproni & Bros., Boston, Mass.

of two classes, those taken directly from life, and those drawn from the imagination of the artist. To the question of the desirability of placing such in schoolhouses, there are two answers:

First, if the intention is to create an appreciation of good art, the portrait, whether bust or photograph, must be chosen for its artistic merit, and not merely because the subject is a famous man. A fairly good likeness is frequently a very poor work of art. For example, it may be deemed wise to have a portrait of Shakespeare in the schoolhouse. Now, of the many different so-called Shakespeares, there is but one which has any particular claim to having been drawn from the great poet during his life. This is the "Droeshout" portrait, of which Mr. Sidney Lee in his "Life of Shakespeare" says: "Although the history of this portrait rests on critical conjecture and on no external contemporary evidence, there seems good ground for regarding it as a portrait of Shakespeare painted in his lifetime—in the forty-fifth year of his age. No other pictorial representation of the poet has equally serious claims to be treated as contemporary with himself, and it therefore presents features of unique interest."

This is one of those portraits of the former class wherein the interest depends upon the probability of actual concrete likeness, and not on any abstract merit as a work of art. For this reason the "Droeshout portrait" has strong claim to being hung in schoolrooms, while the many paintings and busts since made of Shakespeare have but slender claim, they not having the "features of unique interest," or the abstract qualities of high art. It is works of this latter sort which form the second class, and representative of them who have produced such works is the great artist Hans Holbein, who died ten years before Shakespeare was born. His canvasses show us the famous scholars and statesmen of the first half of the sixteenth century, painted from life with the utmost artistic power and skill; Erasmus, for example, and Melancthon, Sir Thomas More and Francis I. and Henry VIII.

As a rule, however, portraits are less desirable for the present purpose than any other forms of art. They are the highest form of art, yet the form hardest to understand and appreciate, and hence least suited to the minds of children. If portraits are to be chosen, let them be such as display dignity and nobility of feature combined with beauty of form and dress, as well as historical or literary interest. Ruben's picture of his wife and two children in the Louvre, Van Dyck's Children of Charles I. with their dog, Sir Joshua Reynolds' Mrs. Siddons, or Stewart's George and Martha Washington. Of poets or statesmen recently dead or still living, photographs from life are as a rule best. If Lincoln is to be represented let it be by what is the most correct likeness of him,—a photograph. Let the pupils learn to reverence the picture as the semblance of a noble and mighty statesman, but not as a work of great art.

Finally, it is good, indeed, that art, which in ages past taught children, as well as their unlettered elders, to love truth and pursue it: that art, which really made the "picturæ ecclesiarum" the "libri laïcorum," should once again take her place as a recognized teacher of youth and a promoter of education.

INDIANA UNIVERSITY.

THE TEACHING OF PHYSIOLOGY IN THE GRADES.—II.

By LOUIS J. RETTGER.

IN the first paper of this short series the attempt was made to show that the real educational value of physiology must be sought in actual points of contact between the minds of the pupil and physiological phenomena or structures. The memorizing of the text-book is no more real physiological study than the memorizing of a library catalogue is a study of literature. The time is not very far distant when physiology will be a laboratory subject, no less than botany or physics. The teachers who now refuse to study real plants in botany but prefer the more easy way of wasting time learning a botanical nomenclature from books will soon be obliged to take to the woods, either to reform their botanical ways or avoid being overtaken by the inevitable. The same is true of physics and chemistry. We no longer tolerate empty names in these subjects. There must be a few contacts with nature. This same scientific spirit

is in the study of language. It is no longer Harvey's opinions in grammar, or Whitney's in English that are to be studied, but actual sentences from the King's own English. In literature we no longer fritter away time studying second-class characterizations of first-class authors, but we go direct to Shakespeare, to Browning, or to Lowell to learn for ourselves what the attributes of these great writers are. So, there is a growing spirit among teachers of physiology that we must get to the real subject and the real facts and not be satisfied with the mere "ipse dixit" of some outside authority, at least not when it has to do with things so elementary and so accessible that every teacher can verify them for himself.

It is the intention in this article to suggest a few very simple physiological experiments which can be repeated anywhere. For their execution no laboratory is needed, no complicated apparatus is required. Although dealing with chemical results, chemical terminology need not be introduced, and the person who has had nothing at all of this science can understand. Not more than 25 cents worth of material is required, and this is available at most any drug store. And yet these experiments deal with fundamental physiological phenomena, concerning which a great deal of formal verbal instruction is usually given in courses in physiology. Of course, to perform such experiments, even though simple, requires extra effort, extra fore-thought, a little added enthusiasm to teach aright, but it is hoped there will be many teachers of this subject who will be willing to pay this extra price to secure added results.

I.—A series of experiments to show the action of saliva. Make a little starch paste by boiling ordinary starch in water for a few minutes. Dilute some of this paste with water until it has a whitish, translucent appearance. This starch paste is familiar to everybody. Starch will always turn a deep blue if treated with a solution of iodine. [A few cents worth of crystals of iodine bought at the drug store and dissolved in water will suffice to make all the tests here indicated.] Add a little iodine to some starch paste in a tumbler and note the intense blue. This proves the existence of starch.

Now take a new bit of starch paste and introduce into the same some saliva, and allow to stand in a warm place if possible for a few minutes. Now introduce a little iodine and note that the blue color does not appear. The starch is gone. It has been changed into some form of sugar. Instead of the blue you now have a reddish color indicative of the existence of a sugar called dextrin, or, perhaps, no well-marked color at all, showing the starch has been changed altogether into maltose.

Repeat this same experiment with a new bit of starch paste, and saliva, but now place the tumbler in a cold place. Notice that it takes much longer for the starch to disappear since ptyaline acts slowly if at all in a cold medium. Take a new bit of starch paste and introduce into this some saliva which has been heated to the boiling point in a test-tube or other vessel. The starch is not affected no matter how long the paste is allowed to stand. The *blue* color with iodine remains. This shows that the ptyaline of the saliva is a ferment of some kind which is destroyed by heating.

Take a new bit of starch paste which is rather dilute. Warm the same to a temperature *a little* higher only than the temperature of body. Now introduce some fresh saliva. After a *half minute* test with iodine and notice the reddish color indicative of sugar. Or the color may be purple. This composite color arises from the blue of some of the starch not yet changed, and the red color of some of the starch now changed to sugar. As the starch changes more and more into sugar the purple fades into a red and when all has been changed to maltose the red itself fades. Under favorable conditions the action of the saliva on the starch can be detected by the iodine drop, within almost a *second* after its introduction.

Take a new bit of milky starch paste, introduce some fresh saliva and allow to stand in a warm place for a half hour. The solution will now be clear, since the starch is changed to sugar and this is dissolved in the water.

Are these experiments difficult? Do they require a laboratory or an array of expensive apparatus? A dime's worth of iodine and a spoonful of ordinary starch from any well-kept kitchen and a plain glass tumbler if beakers or test-tubes are not available, is all that is required. But are not the experiments right to the point if it is the action of saliva that is under discussion? The rapidity with which the starch is changed, the dependence of the action of the ptyaline on the temperature and its destruction by heat are evident. To the pupil there will come a sense of the substance and reality of the points studied, entirely absent when the text-book alone is passively followed. He will have studied the physiology of the saliva in a scientific way. These same experiments (same in principle) the most elaborate university course in physiology would have to retrace.

The action of the gastric juice is no less easily

shown, or less interesting in its rapidity and results.

Prepare some artificial gastric juice by adding some hydrochloric acid and ordinary prepared pepsin to a large tumbler of water. [A nickel's worth of dilute hydrochloric acid, and a dime's worth of ord. prepared pepsin from any drug store will suffice.] The acid in the stomach is hydrochloric acid. Make the tumbler full of water distinctly sour to the taste and dissolve the pepsin in the same. This artificial juice duplicates very nearly the composition of actual gastric juice. Place the tumbler in a warm (not hot) place. When about the temperature of the body introduce into the tumbler a small handful of ordinary blood-fibrin. In fifteen to twenty minutes as a rule the blood-fibrin will be entirely dissolved, and in solution. If there is a meat market available, it is easy to secure some blood-fibrin from the same by asking the dealer to "whip" a little of the blood of a slaughtered animal and to save the strings so whipped out. When these strings are washed they become white and are very excellent to show experiments in artificial digestion. The fibrin is a typical albumen, and being finely divided into shreds it is acted upon much more readily. If fibrin is not available, mince ordinary meat and introduce in the tumbler. Note how after a relatively short time most of the meat is in solution and only the indigestible shreds of connective tissue, etc., remain.

To show that it requires both the hydrochloric acid and the pepsin, make the following additional experiments:

Into one tumbler made distinctly sour, add some fibrin. Do not add any pepsin, however. The fibrin swells up a little after some time, but does not go into solution.

Into another tumbler put some pepsin, but do not make sour. The fibrin is not digested. [To hasten the action of solution it is desirable to stir the solutions occasionally.]

It is very easy to show the effect of temperature on gastric digestion. Place a tumbler containing some acid, pepsin and fibrin in a cold place. Notice that the action is much slowed or altogether stopped. Into another tumbler add a solution of pepsin which has been boiled. No action occurs. Like the ferment of saliva, the ptyaline, pepsin also is destroyed by boiling.

Gastric juice acts on albumens alone. Pour some artificial gastric juice into a solution of starch paste. After a time test with iodine. The blue color remains. Starch is not affected by gastric juice. Pour some artificial gastric juice over some form of oil (olive oil) and allow to stand. Notice that no change occurs. Fats are not affected by the action of gastric juice.

In a succeeding paper it is the intention to add a few additional experiments, as simple as these, but bearing as directly upon the physiological points involved. Perchance there may be some teachers willing to make the attempt to try these experiments, with whom it is hoped they may serve as an introduction to a more rational and scientific way of teaching and studying physiology.

FANCIES CONCERNING FIRE.

As winter comes there are those who long for sunny climes, where flowers and fruits are perennial, but dwellers in

> "The lands that feel no wintry blasts
> Know not the keen delights,
> Which cluster round the blazing fires
> Of the long northern nights.
> What joy to watch the leaping flames,
> In all their frolic dance,
> While listlessly we sit and gaze
> As in some dreamy trance."

When the atmosphere grows chill and rain and wind beat strong we gather about the glowing hearth, but who stops for a moment to consider when or where that fireside orginated? It is believed that the human race was born in tropical climes, and there it must have remained had not fire been discovered. No discovery made since compares with this, as influencing the destiny of mankind. The oldest races of which we have record had turned the discovery of fire into myth and miracle long before authentic history begins. Among several ancient tribes fire was worshipped as a god. Greek mythology tells how Prometheus, in pity for the sufferings of our race, stole fire from heaven and brought it to earth hidden in a reed. The sun was worshipped from time immemorial, and fire was believed to be a symbol of that glowing orb. It is interesting to note how much pagan religion centered about fire worship; how many old superstitions among Christian nations clustered about the hearthstone; how often poet and painter have found their themes in the primeval marvel of the fire. The home fireside is the link between modern existence and those primitive days, when the race was perhaps nearer nature.

It is fire that renders man able to dwell in the colder climates of our globe; wherever he can find, or create for himself by means of fire, a mild temperature, he lives in comfort and ease. We hear it often said that the conquering races are those found in cold climates; this

is true in later centuries, but look back over the past and you will find all the ancient world-wide empires centered in semi-tropical climes; the Assyrian, the Babylonian, the Egyptian, the Persian, the Grecian, and the Roman. All the greatest arts and literatures and religions sprang up in warm climates.

The achievements of modern history would have been impossible except as fire enabled the people to create for themselves tropical warmth about their firesides, and with this help the great works were done. The march of civilization may be measured by the developments made possible by means of fire. Some of the earlier steps in invention were efforts to improve the fire-place. The stove, by greatly reducing the amount of fuel required in cooking or in warming the home, was a great improvement. The word "stove" meant originally a room artificially heated. It might be worth while to note how few of the things that go to make up the comforts of a present-day home could ever have been manufactured except by the assistance of fire. Trace the origin of the paper you hold in your hand; the neatly printed page with which we are so familiar would have been impossible without the powerful agency of fire; there were long centuries of picture writing and hieroglyphics—finally a phonetic alphabet was evolved; then more centuries before, by the aid of fire, men melted and shaped the stubborn iron, and movable type was invented; now, the thoughts of the world are common property to all who care to read. Not only books and papers, but food and clothing, furniture, musical instruments, all the luxuries of our homes, are in a far greater degree than we are accustomed to think, the gifts of the element we call fire. Then need we wonder that in olden times pagan peoples worshipped fire, and regarded each hearthstone as an altar and the ascending flames as an offering to the gods?

Let the wind rage without, with all the fury of winter; within, a cheery fire renders the room of tropical warmth; where, surrounded by friends, one may sit with a sense of security against the elements; without, snow flakes fall noiselessly; within, growing plants lend their fragrance; the family cat on the hearthrug purrs its delight and basks in the sunlight of past ages. It is a well-known fact that sunshine is the condition of all life and the fire in our grates and stoves (if of coal or wood), is merely transformed sunshine stored up in coal beds or in forests thousands of years ago.

The fireside has always developed the social and spiritual natures of men and women.

"Flashes the firelight upon the dear faces,
Dearer and dearer as onward we go;
Forces the shadow behind us and places
Brightness around us with warmth in its glow.
Hasten then to crown the king,
Winter the kingdom, but *fire* is the king."

L. N. H.

BLOOMINGDALE, IND.

THE WORK OF A CHRISTIAN COLLEGE.

I have been asked to say something about the college, and what I have to say will best gather about the subject given above.

1. In the first place the Christian college seeks to impart general culture—as against specialized forms of education. The general culture which is the main object of the college is to be compared to the development of the whole body; while special lines of training are like the development of certain organs or parts as the arm or the leg, while the body as a whole is neglected. And, following the figure, the best way to have a strong arm is first to have a strong body—just as to become an able specialist one needs first to be well educated generally.

It is a sad sight to see young men and young women taking up study in the professional lines in the absence of previous liberal culture. It means specialists of but moderate ability; and worse, it means mere skill in a narrow field as against the large manhood and womanhood which are the true glory and safe-guard of the nation. We do need physicians and attorneys and ministers and mechanics—but far more, we need men of broad information, strong reasoning power and high moral purpose. The college that is wise confines its energy to the bringing about of this large symmetric culture. The temptation sometimes comes to a college to "tack on" all sorts of attractions; such as, telegraphy, stenography, business methods, and in turn all the specialties that are appropriate to schools of technology; but most surely in such a case "to yield to temptation is sin." Far better to reply in the words of Nehemiah to Somballat, "Why should the work cease whilst I leave it and come down to you?"

The long past has taught us that a genuine mastery of the elements of language, literature, science, and philosophy is the best preparation and assurance of large success in the pursuits of civilized life. And so, if it were possible that all professional and technical study could be based upon the general training of the college, we might expect far more satisfactory results in the status of our country in the years to come. It is useless to deny that in the midst of a

"bread-and-butter" sentiment, it takes courage to emphasize the plea for liberal education —and yet, fidelity to the highest interests of our youth demands it. "Rush orders" have no place in the liberal preparation which the young man is making for his life's work. He saves time, in the long view, by his fullness of training and his breadth of horizon; the patient investigation in the fields of learning bears the fuller fruitage, in his years of responsibility.

2. In the second place it seeks to effect this symmetry of power and character by means of the impress of the personality of the teacher upon the personality of the student. In the college the classes are not so large but that every member of the class may expect to be called upon at every recitation.

There is no place for "casting up chances" as to when the student may be called on. Again, the classes are not so large but that the professor may come to know each member of his class, and to take a personal interest in him. Orphaned, indeed, is the student whose college professors do not know him by name, and who does not inquire into his history, his ability and his purposes.

Human nature being as it is, students do not enjoy being known simply as number one or two or three: and the Professor has passed by a golden opportunity if he does not enter into the very core of the life of his student. Ask the great men of the country what were the deciding factors in the achievements of life, and if they do not say they were the influence of a mother, they will say it was the personal interest and inspiration of a college president or professor. We can, therefore, readily see that a double responsibility rests upon the board of the Christian college in the choice of its instructors. While the intellectual fitness of the professor dare not be omitted—there is another fitness of more consequence; namely, the fitness to lead and guide the students in all that goes to make up purity and greatness of character. And still to add to the responsibility of the board, is the fact that even one professor can, by inuendo or outright opposition to Christianity, "incarnadine the multitudinous seas" of youthful thought to such an extent, that years of right teaching cannot remedy the evil. One man can kindle a destructive fire that ten men cannot extinguish.

To impress the great power of the personality of the teacher I need but refer to such men as Dwight, Nott, Wayland, Hopkins, Anderson, Robinson, McCosh and Arnold. Some of the great leaders to-day in state and church are the pupils of these teachers. Truth and goodness incarnate in the teacher, become almost omnipotent when brought to bear upon the plastic mind and heart of youth in the days of college study. We shall make a mistake if we hope for like results from mere machinery.

3. In the third place it is the work of the Christian college to emphasize the principles and practice of Christianity in the daily life of the institution. By this is not by any means meant a mere respectful deference (or possibly better, sufferance) to Christian thought, but rather positive acceptance and teaching. Christianity is not a little bundle of beautiful sentiments which the strong man feels no need of. It is a system of doctrines so rugged and fundamental that higher education can not ignore them. Such questions as the origin of all things, the origin of man, the nature of the soul, the person and office of Jesus Christ, our moral relations and the duties that grow out of them, cannot be blandly bowed out of court.

This is one reason why the education which the college gives is said to be liberal;—it contemplates man in all the great functions of his nature, and in all the reach of his essential relations. Any education less liberal is for that reason imperfect.

To sum up—The work of the Christian college is (1) To impart a liberal rather than a special education. (2) To mould the student by the personal influence of the professor, and (3) To give emphasis in all ways to the principles of Christianity.

W. T. STOTT.

FRANKLIN, IND.

WINTER.

A wrinkled, crabbed man they picture thee,
Old Winter, with a rugged beard as gray
As the long moss upon the apple-tree;
Blue-lipt, an ice-drop at thy sharp, blue nose,
Close muffled up, and on thy dreary way
Plodding alone through sleet and drifting snows.

They should have drawn thee by the high-heaped hearth,
Old Winter! seated in thy great arm-chair,
Watching the children at their Christmas mirth;
Or circled by them as thy lips declare
Some merry jest, or tale of murder dire,
Or troubled spirit that disturbs the night;
Pausing at times to rouse the smouldering fire,
Or taste the old October brown and bright.

—*Robert Southey.*

THE TOWNSHIP INSTITUTE.

SIXTH MEETING.

NOTE—It should be borne in mind that the outline on Organic Education is based upon Miss Scott's book by that title, published by D. C. Heath & Co., 90 cents, and the outline on Reading upon Professor Clark's *How to Teach Reading*, published by Scott, Foresman & Co., 75 cents.

ORGANIC EDUCATION.

OUTLINE.

1. Chapter VIII.
 a. Read as a whole and study "The Story" in connection with each grade and character before considering the "Comparison."
 b. Examine the work under "Comparison," "Measure" and "Expression" in the same way.
 c. Give close attention to the lists of reference books, pictures and reliefs.
 (1) Consider means of obtaining such of these as may be desired and the process and value of using them.

COMMENT.

In considering the work under *Organic Education* this month the teacher should study with especial care the meaning which the author puts into the word "story". Usually the word "story" means a narration. It is a narration of events either real or ideal and these events generally rise to a climax. The story of the Wanderings of Ulysses is an example under this first use. The story of the suffering of the Pilgrims in New England is also an example. The first relates to the ideal and the second to the real. An examination of the dictionary will show, however, a second meaning for the word "story". According to this second definition the word "story" denotes the enumeration in order of the significant facts in any subject. It is in this second sense that the author uses the word "story" in *Organic Education*. All that is explained under the heading of The Story should be carefully worked out in regard to each character before the work under Comparison, Measure and Expression is to be entered upon. With this in view, attention may be given somewhat carefully, to the use of the "story" in the discussion of Hiawatha. Whatever is presented under the "story" concerning Hiawatha is typical of that which should be given under each of the other characters. The order of the topics treated in the form of a story is to be noted in the beginning, because, as above suggested, it is typical. There is given, first, the appearance of the individual. This is succeeded by the story on the clothing. One is reminded by the order of treatment of Carlyle's great work entitled, "Sartor Resartus". In this work he regarded not only the actual clothing of the individual as garments which both expressed his nature, and protected him, but he also viewed each of the institutions of society as a garment,—as a kind of clothing, which is both a product of the individual's life and at the same time a protection to him and a modifier of him. In somewhat the same significance these different topics treated in the form of the story, appear in the *Organic Education*. The home, the school, the social world, the industrial organizations, the state and the church are garments, clothing. Each one is the product of the individual and reveals his nature. Each one protects him. Each one returns with its influence to the individual and helps to reform, to develop him. The definite sense under which the word "story" is used may now be illustrated with each of the topics mentioned.

1. In regard to the appearance of Hiawatha.—On the understanding that the story gives the significant facts under the subject, it will appear here that the story shows the following things:

a. Certain characteristics of the body as a whole—Hiawatha was tall for his age, straight and slender.

b. Certain facts concerning his face—it was the color of a copper cent.

c. The fact that his hair was black and straight.

d. The fact that his eyes were dark.

e. The fact that his cheek-bones were high. These facts might be presented in story form under three topics only. In the first it would be shown that the body as a whole was tall, straight and slender. In the next place the characteristics of the face would be presented. In this part of the story it would be shown that the face is copper colored; that the cheek-bones are high, and that the eyes are dark. In the third place the story would bring out the fact that the hair is black and straight. Further, the story could treat the topic under two headings. Beginning with the body as a whole it would be shown that Hiawatha is tall, straight and slender. Then concerning the head it would be explained that the hair is straight and black, the face copper-colored and characterized by high cheek-bones, and the eyes dark.

2. In regard to the clothing.—Under this story it would be shown;

a. That the ordinary clothing of Hiawatha is the deer skin skirt, mantle, etc.

b. That in addition to this ordinary clothing Hiawatha, being a creature divine from the father's side, possessed peculiar features in his clothing. These were the magic mittens and the enchanted moccasons.

"He had mittens, Minjekahwun
Magic mittens made of deer-skin;
When upon his hands he wore them,
He could smite the rocks asunder,
He could grind them into powder.
He had moccasons enchanted,
Magic moccasons of deer-skin;
When he bound them round his ankles,
When upon his feet he tied them,
At each stride a mile he measured!"

c. That there is a more elaborate festal dress:

"He was dressed in shirt of doeskin,
White and soft and fringed with ermine,
All inwrought with beads of wampum;
He was dressed in deer-skin leggins,
Fringed with hedgehog quills and ermine
And in moccasons of buck-akin,
Thick with quills and beads embroidered.
On his head were plumes of swan's down,
On his heels were tails of foxes,
In one hand a fan of feathers,
And a pipe was in the other."

d. That the source of the material for clothing was mainly from the hunt:

"From the red deer's hide Nokomis
Made a cloak for Hiawatha."

3. In regard to Hiawatha's home.—Under this story it would be shown:

a. That Hiawatha's home was a wigwam.

b. That the wigwam is usually made of poles fastened together at the top and covered with undressed deer-skin. It would, also, be shown that ordinarily it consists of one room only, and has but one door. It would be further explained that a mere opening at the top where the poles are fastened together served as a very inadequate chimney.

c. That in the poem there is presented an idealized picture of the Indian wigwam. The wigwam referred to is the home of Minnehaha:

"Very spacious was the wigwam,
Made of deer-skin dressed and whitened,
With the Gods of the Dacotahs,
Drawn and painted on its curtains,
And so tall the doorway, hardly
Hiawatha stooped to enter,
Hardly touched his eagle-feathers
As he entered at the door-way."

d. That in the wigwam would occur the following acts belonging to the home—in the wigwam Hiawatha would be rocked to sleep in his linden cradle; in it Nokomis would cook the food; in it the meals would be eaten, and in it at night they would sleep.

4. In regard to the food.—Under this the story would show that the food consisted of various kinds of meat obtained from hunting and fishing; of vegetables, such as wild rice, corn, squash, etc.; of fruits, such as the strawberry, the blueberry, the wild-grape, the melon, etc.

5. In regard to the school.—Under this the story would show:

a. That the school is located, not in any one building, but in the forest, on the shore of the lake, along the bank of the river, and in or near the wigwam of Nokomis.

b. That the teachers are the natural environment, Nokomis, Iagoo, and the other hunters and members of the tribe.

c. That he learned whatever was to be seen and heard in his environment; how to make bows and arrows, canoe and wigwam; how to use his weapon, to fish, to run swiftly, to endure fatigue and fasting.

6. In regard to social life.—Under this story it would be shown:

a. That, in addition to Nokomis, Hiawatha possessed two special friends,—Chibiabos the sweet singer, and Kwasind the strong man—the athlete.

b. That these always helped one another, never quarreling.

c. That the main social acts were (1) games; such as, playing quoits and ball, running races, etc. (2) Feasting.—Under feasting the manner of inviting the guests is to be noticed.

"She had sent through all the village
Messengers with wands of willow,
As a sign of invitation,
As a token of the feasting."

Under the feasting the courses and the serving are to be referred to. (The explanation of this is given under "The Wedding-Feast". It begins with "First they ate the sturgeon, Nahma," and ends with "And with herbs and leaves of fragrance". It is to be noticed, further, that the amusements are dancing, music and story-telling. The account of these is given under "Hiawatha's Wedding-Feast," and under "The Son of the Evening Star".)

7. In regard to industrial life.—The story under industrial life would show:

a. That Iagoo made the linden cradle for the baby, and the bows and arrows for Hiawatha when he became larger.

b. That Kwasind cleared the river.

c. That Hiawatha shot the deer, made the wigwam, the canoe and the dishes.

d. That Nokomis cooked the deer for food;

made a coat and other clothing for Hiawatha from the skin, and raised and ground the corn.

8. In regard to the state.—The story concerning the state would show:

a. That Hiawatha, upon becoming a man, took the position of chief of the tribe.

b. That this position came to him on account of his strength, his wisdom, and his devotion to the people:

"You shall hear how Hiawatha
Prayed and fasted in the forest,
Not for greater skill in hunting,
Not for greater craft in fishing,
Not for triumphs in the battle,
And renown among the warriors,
But for profit of the people,
For advantage of the nation."

9. In regard to the church.—Under this the story would reveal the fact that Hiawatha and the Indians in general possessed a definite belief concerning the Great Spirit. It would also bring to the attention of the children his prayer:

"Master of Life!" he cried, desponding,
"Must our lives depend on these things?"

It would, in addition, make known to them the reply of the great spirit. This reply was the gift of Mondamin—the corn plant.

"Gave the first Feast of Mondamin,
And made known unto the people
This new gift of the Great Spirit."

The story of these aspects of the life of Hiawatha is to set forth the basis for the other lines of work known as "Comparison," "Measure," and "Expression." The mode of treatment herein given concerning Hiawatha is to be made, as previously suggested, typical of the work concerning the other characters.

HOWARD SANDISON.

HOW TO TEACH READING IN THE PUBLIC SCHOOLS.

OUTLINE.

I. EMOTION. (Page 172)
 a. How can we develop the emotional powers of the child by appealing to his own experience?
 b. What suggestions can you gather from this chapter that will help us to overcome the pupil's shyness in expressing the deeper feelings?

II. ATMOSPHERE. (Page 184.)
 a. Illustrate by reading the example on p. 189 what you understand by *Atmosphere*.
 b. What element of expression will manifest the *Atmosphere*? Illustrate by reading aloud the selection, p. 193.

COMMENT.

It is a well known axiom of psychology that at certain periods in the child's development there are manifested certain tendencies. If these are fostered they develop into habits: if they are neglected they may die out and never reappear. So it is in the realm of feeling. The tendency to express emotion is universal, and must be encouraged if it is not to die out forever. How, then, may the teacher of reading take advantage of this tendency and utilize it in the development of the pupils? First, the schoolroom must be beautiful. It need not be decorated with mural paintings, nor need the ceilings be frescoed. But there is no excuse for the absence of flowers, in and out of season; no reason why there should not be reproductions of the world's great paintings, and photographs of sculpture and cathedrals. Here, then, is a hint that should help us to find the proper surroundings in which that rare exotic—feeling—may bud and blossom. In the second place, we must use the greatest care that our own enthusiasm is true, genuine, and not affected. The over-sweet tone of approbation and the simulated delight are quickly appraised by the child at their true value, and where they do not fill him with doubt as to the genuineness of the teacher's love of the beautiful, are more than likely to beget a chalk-and-water expression of face and a lackadaisical sweetness of voice that are revolting in the extreme.

In the third place, let us not preach too much of beauty, love, sacrifice. Nature doesn't preach. She is just herself. She asks only that we observe her with sympathetic eye, and listen to her with sympathetic ear. I do not mean that we may not call the attention of children to what is beautiful. It is right to point out a beautiful sunset, a laughing brook, or the majesty of a blasted oak. But let us stop there. Beauty needs no vindication, and little explanation. If we contemplate her long enough she will enter our hearts and take possession of her own. If she do not, the fault is in us and no amount of dogmatism or preaching can change the condition of affairs. Let us do our utmost, then, to bring the child into contact with life,—nature and human nature—and when we have done this we may safely leave the rest to time. In the fourth place, we must not expect a child to express emotions beyond his years. By this it is not meant that it is necessary for him to have experienced the identical kind and intensity of emotion set forth in the selection before he can appreciate the selection. (See "How to Teach Reading," page 172.) But we must bear in mind that there are many aspects of the emotional life with which childhood has never come into contact, and to compel a pupil to express such aspect is to discourage him, on the one hand, or, on the other, to sow the seeds of a miserable affectation, which is far worse.

S. H. CLARK.

ADOLESCENCE.

OUTLINE.

PEDAGOGICAL PHASE.

1. The course of study. Should the course of study differentiate to correspond with the change? Should boys and girls pursue separate courses intended to better prepare them for their respective places in life? Manual and domestic training is valuable at this time of life and seems to meet the peculiar needs of the adolescent.

2. The relative value of men and women as teachers of children of pubescent age. Shall boys be taught by men and girls by women teachers, or both boys and girls be taught by both men and women? May there not be a lack of masculine influence at this time?

3. Amount of work. Do children of this age sometimes overwork in the schoolroom? Does trouble with the eyes, the heart, digestion, etc., result from too close confinement in the school? Should girls be allowed a short rest each month? Professor Nesteroff says that the psychological development of pupils is impaired, not only by our knowledge, but also by the present system by which the faculties of pupils are judged. This system causes a mental strain and brings on physical depression, which have a damnable influence an physical development. The entire question of school fatigue should receive more attention.

4. Can we have a scientific pedagogy until we have made careful studies of each epoch of child life? Pubescence stands to adult life as infancy to childhood—it is the beginning of the second and broader life, and as such is worthy of careful study.

COMMENT.

1. The course of study when constructed on right principles will always be flexible enough to meet all the conditions in the life of the pupil. The problem is one of adjustment of the course to meet the conditions. The solution of the problem lies with the teacher. The necessity of large pedagogical insight and sympathy at this juncture is apparent. No mechanical teacher holding to hard and fast lines can succeed here. The writer does not believe separate courses in what may be called academic work are required. The study of such problems as these is making more and more clear the place manual training must have in our schools from the kindergarten through the high school. In this time of change the principle involved in manual instruction is of particular value. Employment of mind and body in expression and creation serves to lift the child over this period of doubt, and plant its feet in firm places. Of course the work in manual training may be different for boys and girls, but even here there is no necessity for radically separate courses.

2. In the opinion of the writer the difficulty here lies rather in the man or woman than in the sex. If the teacher is a real man or a real woman it does not make a particle of difference to which sex he belongs. It can be easily shown that most, if not all of the troubles that arise in the management of boys and girls are due to the fact that the teachers are not big enough men and women. The boys and girls need the influence of manly men and womanly women at this period. May not the so-called lack of masculine influence be a call for muscle to drive, in the absence of men and women big enough to lead? What the boys and girls need is manly any womanly hearts full of sympathy, and manly and womanly insight keen enough to read the needs of the hour. The day for choosing teachers as Saul was chosen king has passed.

3. Undoubtedly the children at this period as well as others do sometimes overwork. The problem lies with the teacher again. The necessity for understanding the whole life of the child is enlarged at this period. Larger tact with pupil and parent is demanded. Larger knowledge of the physical side of life is imperative. The parent is often ignorant and a word from the teacher may save the life of the child. Health is of more importance than attendance per cents. It is of more importance even than grades and deportment and promotion cards. The real teacher puts the welfare of the child above her tardy list. Eyes and ears and heart and digestion and breathing and clothing and heat and cold and wet feet and a hundred other things claim the especial attention of teacher and parent at this period. The fatigue problem demands the keenest insight. Henceforth the plea of blindness will not avail. It is a part of the teacher's business to see.

4. Perhaps we cannot have a scientific pedagogy until we have made careful studies of each epoch of child life. The writer thinks we cannot, because a scientific pedagogy must be built on the insights gained from a study of the nature of the child. But a scientific pedagogy will not avail unless we shall have men and women big enough to teach school. And these men and women will have their hearts in the work, and truth will be their goal, and life here and now for all the boys and girls will be written on their banners. A friend of the writer's who is one of these big teachers, in a recent letter made the following reference to adolescence: "Ever since my eyes were opened to the meaning of that particular period in life, I have given it much thought, and I believe that such an understanding of young people is to be the ounce of prevention which will make the pound of cure unnecessary in the future." And she is right both from the physical and spiritual point of view.

FRANCIS M. STALKER.

BITS OF INFORMATION IN GRAMMAR.

THE SIMPLE SENTENCE.

All work in technical grammar must be directed toward the mastery of the sentence. In the study of grammar, the sentence is the unit—the end of all the work. Whenever the student is complete master of simple, compound and complex sentences, he has finished his work in grammar.

What are the steps which the pupil must take in mastering the simple sentence? First, he must understand the nature of the sentence as a whole: (1) It expresses a thought composed of three elements—thought subject, thought predicate, and thought relation. (2) The sentence is, therefore, composed of three parts—subject, predicate, and copula. (3) On basis of purpose, sentences are of four kinds—declarative, interrogative, exclamatory, and imperative. (4) On basis of number and relation of thoughts expressed, sentences are of three kinds—simple, compound, and complex.

Second, in working on the organic parts of a sentence: (1) The pupil must see the kinds of ideas of which thought subjects, thought predicates, and thought relations may be made up—objects of thought, attributes, and ideas of relation. (2) The kinds of words of which subjects, predicates and copulas may be composed—substantive words,—nouns and pronouns; attributive words,—adjectives, adverbs, and attributive verbs; relation words,—prepositions, pure verbs, and conjunctions. In working out this last point the pupil will see that predicates may be combined or uncombined and substantive or attributive. (3) The kinds of modifiers which may belong to these different kinds of words—substantive,—appositive, possessive, direct objective, indirect objective, adverbial objective; attributive,—adjective, adverbial.

I have indicated now the main points which one would consider in mastering the sentence as a whole and in dealing with the organic parts of it. Some minor points, such as, punctuation, arrangement, etc., would come up and be considered in connection with these points, but the bulk of the work has been clearly indicated.

All this time the pupil has been working toward a complete mastery of the sentence. When he learns that all thoughts are composed of three elements, he analyzes many thoughts and points out these three elements. He does the same with many sentences when he has discovered that each has three parts. Every time he gains a point he analyzes many sentences to verify his discovery. He can tell more and more about sentences in his analysis of them as he proceeds, but so far as I have indicated the work, he cannot yet give a complete analysis or tell all about the simple, the compound or the complex sentence, because he has not yet applied his knowledge to any one of these sentence forms. His analyses of sentences so far, have been only partial.

But the pupil is now ready to take up these sentence forms. He begins with the simple sentence because it is easiest, and works out all the uses of words in it. He sees just what kinds of words may be used in forming the simple sentence, and in just how many and what ways each kind of word may be used. He sees just how many and what kinds of modifiers each kind of word may take in the simple sentence. So that if you say to him, "In how many and what ways can the adjective be used in the simple sentence?" he will be able to answer, "Two ways: (1) To modify a substantive word; e. g., The *large* ball is red; (2) predicate or principal part of it; e. g., My top is *round*; The rose is very *fragrant*." "How many and what modifiers may the noun have in the simple sentence?" "Three: (1) Appositive; e. g., Milton, *the poet*, was blind, (2) possessive; e. g., *Mary's* book is new, (3) adjective; e. g., *Large* apples are not sweet."

If the pupil then masters the groups of words or phrases, used in forming the simple sentence, he will be able to give a complete analysis of this kind of sentence, i. e., he has mastered the form which we call simple sentence as an instrument in expressing his thought. He can state the results of his study in some such form as the following:

COMPLETE ANALYSIS OF THE SIMPLE SENTENCE.

"Silently, one by one, in the infinite meadows of heaven, blossomed the lovely stars."

1. Classify the sentence and give reason.
 a. On basis of purpose.
 b. On basis of number and relation of thoughts expressed.
2. State the principal elements of the thought and give reasons.
3. Give the principal parts of the sentence and reasons.
4. Give the principal word in each part. The modifiers of it, and all the modifiers of these modifiers. Give reasons for each modifier. Analyze prepositional phrases in giving modifiers.

1. (a) On basis of purpose this is a declarative sentence, because its purpose is to convey information. (b) On basis of number and relation of thoughts expressed, it is a simple sentence, because it expresses a single thought subject, a

single thought predicate, and a single thought relation.

2. The thought subject is the idea, *the lovely stars*, because it is the idea about which the mind asserts something. The thought predicate is the idea, *blossomed, silently, one by one in the infinite meadows of heaven*, because it is the idea which the mind asserts of the thought subject. The thought relation is one of agreement, because it is a relation in which the mind asserts that the thought predicate belongs to the thought subject.

3. The subject of the sentence is the words, "the lovely stars," because they express the thought subject. The predicate of the sentence is the words, "blossomed, silently, one by one, in the infinite meadows of heaven," because they express the thought predicate. The copula is implied in the word "blossomed," which may be expanded to, were blossoming, in which case the word "were" is the copula, because it expresses the thought relation.

4. "Stars" is the principal word in the subject because it expresses the principal idea in the thought subject. The word "stars" is modified by the word "the," a limiting adjective modifier, because it is an adjective modifier, the chief purpose of which is to narrow the application of the word which it modifies. The word "stars" is also modified by the word "lovely," a descriptive adjective modifier, because it is an adjective modifier, the chief purpose of which is to emphasize the attribute which it expresses.

"Blossomed" is the chief word in the predicate because it expresses the principal idea in the thought predicate. The word "blossomed" is modified by the word "silently," an adverbial modifier, because it is an attributive modifier which changes the meaning of an attributive word by expressing an attribute of an attribute. It expresses the adverbial idea of manner. The word "blossomed" is also modified by the group of words, "one by one," an adverbial modifier, because it is an attributive modifier which changes the meaning of an attributive word by expressing an attribute of an attribute. It expresses the adverbial idea of manner. It is further modified by the prepositional phrase, "in the infinite meadows of heaven," an adverbial modifier, because it is an attributive modifier which changes the meaning of an attributive word by expressing an attribute of an attribute. It expresses the adverbial idea of place.

The word "in" is the characteristic word of the prepositional phrase of which the word "meadows" is the principal word because it expresses the principal ideas expressed by the prepositional phrase. The word "meadows" is modified by the word "the", a limiting adjective modifier because it is an adjective modifier the chief purpose of which is to narrow the application of the word which it modifies; it is also modified by the word "infinite", a descriptive adjective modifier because it is an adjective modifier the chief purpose of which is to emphasize the attribute which it expresses. The word "meadows" is further modified by the prepositional phrase, "of heaven", a limiting adjective modifier because it is an adjective modifier, the chief purpose of which is to narrow the application of the word which it modifies. The word "of" is the characteristic word of the prepositional phrase and the word "heaven" is the principal word in the phrase because it expresses the principal idea expressed by the prepositional phrase.

J. B. WISLEY.

THE METEOR DISPLAY.

The meteor display on November 14th, 15th and 16th was disappointing. Unfavorable conditions hampered the astronomers at the Naval observatory at Washington on the 14th; clouds prevented observations until 3 o'clock A. M., and it was only partially clear at any time. Paths of the ten Leonid meteors were plotted on the star chart. One of these was as bright as a second magnitude star, but the others were fainter. The conditions at the Harvard observatory were very unfavorable for observing the meteoric display. The efforts of the observers met with some success, however. On November 16th, twenty meteors were seen about 5 o'clock A. M., at Chicago; the student watchers had an opportunity which was denied to the astronomers of the Yerkes observatory. At the Flower observatory of the University of Pennsylvania, Philadelphia, the watchers recorded 102 meteors, sixty-nine of which were Leonids.

Nearly all the meteors observed were faint, only a few of them being of the second magnitude. Most of the non-Leonids were scarcely discernible. In no instance did a meteor leave a trail visible for more than a few seconds. The Harvard observatory counted sixty-four, but the display hardly came up to the expectations of the astronomers. Professor Howe, of the university of Denver, reported that he counted eighteen Leonids besides a large number of meteors in other portions of the sky. On November 14th, many students of Princeton stayed

out long after midnight to observe them, and in order that all might have an opportunity of observing them the bells in the town rang to wake up the students at one o'clock. No photographs were taken of the few stray meteors which were seen. At McGill university photographs of 156 meteors were obtained. By the falling of an aerolite seven miles south of Crescent City, Ill., a residence was partly wrecked, tearing away a portion of the upper story. The aerolite buried itself in the ground about three feet from the foundation of the house.

In England a balloon made an ascension for the purpose of observing the Leonid shower. The observers saw only five meteors, and they were obliged to make a sudden descent as the balloon was drifting toward the sea. As a result two of the three occupants of the balloon were injured. Generally speaking, the European observations proved a failure, except in the Austrian Alps, where, on November 15th, no less than 300 Leonids were seen and photographed. One hundred were seen at Paris and a fair display at Brussels.

The most interesting report received from the observations in the United States on November 15th is a dispatch, unsubstantiated as yet by astronomical authorities, to the effect that a large meteorite fell in the woods just east of Webster City, Iowa. The dispatch said that the falling body came down with a terrific roar and all seething and smoking plowed out a hole in the ground fifty feet square. If the report is verified the find will be more than usually interesting, because, while meteorites at times fall to the earth, it is not known that any of the Leonids have hitherto penetrated through the earth's dense atmosphere without being entirely consumed.—*Scientific American.*

RELATIVE TO TEACHERS' EXAMINATIONS FOR 1900.

Editor of Inland Educator:

DEAR SIR:—I have before me a number of letters from Indiana teachers inquiring about the examinations for 1900. Please publish the following information:

1. Examinations for county common school, county high school, state common school, state high school and state sixty months licenses will be held on the last Saturday of each of the first eight months of the calendar year.

2. The examination for Professional License will be held on the last Saturday of March, and for Life State License on the last Saturday of April. The State Board of Education is revising its rules governing the examinations of teachers for these two licenses, and will publish them in the revised form in the February issue of THE EDUCATOR.

3. The examination for County Primary and State Primary Licenses will be held on the last Saturday of each of the followings months, viz.: March, April and May.

4. Beginning with January, 1900, and continuing through the year, one set of questions in the Science of Education will be based upon Scott's *Organic Education* and one on general pedagogy, the teacher being privileged to select either set. The same arrangement obtains in the subject of reading—one set from Clark's *How to Teach Reading*, the other from the whole field of reading. All applicants for a common school license of any grade are required to take an examination in Literature. The questions will be quite elementary and will cover the fields of English and American authors and selections.

5. By provisions of an act of the last legislature, applicants for any grade of license, except a six-months common school license, may elect to have their manuscripts graded either by the County Superintendent or the State Superintendent; a license issued by the former is valid to teach in the county in which it is issued; one issued by the latter is valid to teach the subjects in any part of the state.

For convenience the State Licenses are classified as follows:

1. The Life State License, general average of 75 per cent., not falling below 60 per cent. in any branch, will be known as a license of the *first grade.*

2. The Professional State License, general average of 75 per cent., not falling below 60 per cent. in any branch, will be known as a license of the *second grade.*

3. The Sixty Months' or High School State License, described under Section II above, will be known as a license of the *third grade.*

4. The Thirty-six Months' State License, valid in an any county, general average of 95 per cent., not falling below 85 per cent. in any of the "Common Branches," will be known as a license of the *fourth grade.*

5. The Twenty-four Months' State License, valid in any county, general average of 90 per cent., not falling below 85 per cent. in any of the "Common Branches," will be known as a license of the *fifth grade.*

6. The Twelve Months' State License, valid in any county, general average of 85 per cent., not falling below 75 per cent. in any of the "Common Branches," will be known as a license of the *sixth grade.*

The examination for a Sixty Months' License must be taken in two sections or divisions, the grades being as follows: The first division, an average of 95 per cent., not falling below 85 per cent. in the "Common Branches;" the second division, an average of 75 per cent., not falling below 60 per cent. in any of the five branches as follows:

Group 1. Literature and Composition (required by all applicants).

Group 2. Algebra or Geometry (one required).

Group 3. Botany, Zoology, Chemistry, Physics, or Physical Geography (one required).

Group 4. History and Civics or Latin (one required).

Group 5. One subject from "2", "3" or "4" not already taken. Five subjects are required in this division.

In order to secure a sixty months' license the MSS. of both divisions must be sent to the Department of Public Instruction, by number, for gradation. The fee of $1.00 must be sent with the MSS. in each division.

Applicants for a 12, 24, or 36-months' State License, use the same questions that are used in the regular county examination.

Manuscripts for a State License should be sent to the Department by number. The name of the applicant should not appear on the manuscript; but the name of the county in which the examination is taken, the names of all the counties and states in which the applicant has taught, the name of the county in which the applicant taught last, and where and how long the applicant has studied should be plainly set forth on the manuscript.

Applicants for a sixty-months license should indicate on each manuscript the number of the section; as, "Section I," or "Section II."

The County Superintendent should record the number and name of the applicant together with the date of examination.

One dollar should be sent with each manuscript.

The item of school-room "Success," graded from 50 to 100, by the Superintendent under whom the applicant last taught, should be sent with the manuscript.

All applicants should write in regular manuscript books, except when writing for a Life State or Professional certificate.

The name of the applicant and his post-office address should be left with the County Superintendent, *without fail.*

Very truly,

FRANK L. JONES,

State Superintendent of Public Instruction.

WHENCE CAME THE ARYANS?

Editor of the Inland Educator:

DEAR SIR:—The State Board of Education bases the primary history work on the book called *Ten Boys.* This book, also *An Outline of Method in History*, and the Institute Outlines teach that the Aryan race originated in Asia and migrated by successive waves into Europe. Why does the State Board continue to promulgate this idea when modern research has almost, if not entirely, refuted the theory of the Asiatic origin of the Aryans? Respectfully,

GEORGE BRANSON.

MARSHALL, IND.

AMONG THE NEW BOOKS.

Based on the work of his classroom, Dr. Levi Seeley of the New Jersey state normal school has prepared *A History of Education.* Its chief value lies in its practical character as a plain, accurate, comprehensive presentation of as much of the subject as the average teacher needs to know. Whatever of value the past has contributed to pedagogical knowledge is carefully considered in such a way that the intelligent teacher may apply it in the schoolroom to-day. The general outline includes Pre-Christian, Earlier Christian, and Modern Education. The book, as stated, is one for the average student, but it has great value, none the less, for special students by virtue of a good bibliography at the heads of chapters, foot references to special citations, a general bibliography as an appendix, and an excellent index. [American Book Co., 343 pages, $1.25.]

In addition to the volume of *Educational Nuggets* announced in the December EDUCATOR there have come three other volumes in the same series. *Patriotic Nuggets*, compiled by John R. Howard is devoted to six eminent Americans: Franklin, Washington, Jefferson, Webster, Lincoln, Beecher. But instead of being biographical in the ordinary sense it gives us close views of their personalities through series of individual letters. Moreover, these are not general letters. but carefully chosen ones that show the development and growth of the federal union idea. Hence, as a bit of historical study this little volume is unique and valuable; while from a literary standpoint the fine collection of thoughts from these masters in English makes it delightful as well as useful. A second volume is called *Don't Worry Nuggets.* This is made up of thought gems from Epictetus, Emerson, George

Eliot and Robert Browning,—compiled by Jeanne G. Pennington. It is a book to pick up in the morning for the day's inspiration. The extracts are short and express that calm, serene state of mind which stands as the antithesis of nervous worry and depression. *Philosophical Nuggets*, compiled by the same author contains master thoughts from the master minds of Carlyle, Ruskin, Amiel and Kingsley. The word "nuggets" applies to this collection especially well. The reader will find in it a rich mine of thoughts, clear-cut, stimulating, the kind to set us thinking in turn. This series of little books is uniform in style, 3⅝ by 5⅜, flexible cloth, gilt top. [Fords, Howard, and Hulburt, New York, 40 cents each.]

"*The English Novel*" by Sidney Lanier, is a thoroughly comprehensive and critical study of the development of *personality* in imaginative literature from the date of Æschylus to that of George Eliot. Much of the literature of this period views human beings en masse, as one sees a landscape and sky filled with countless flying snow-flakes. Mr. Lanier takes up these flakes separately, places them singly under his powerful and critical glass, points out their beauties, excites the interest of the student by revealing their separate and distinct personality, that peculiarity which is one of the principal charms of modern literature. Here is the discovery of the essential difference between man and man. The dread monotony of uniformity is broken. In early literature *personality* was lost in the domination of destiny by the fiat of fate. In later literature *personality* stands forth boldly, as its own reason for being. The work traces this development to its highest manifestation in George Eliot, and to the thoughtful student will prove a veritable thesaurus of profit and delight. [Chas. Scribner's Sons, $2.00.]

Professor Frank Moore Colby of New York university has written new *Outlines of General History* for the use of college preparatory and high schools. It would seem that there is small chance to modify the plan and scope of a general history limited to a single volume; it must be said, however, that Professor Colby has written attractively, simply and clearly, and that the choice of material has been well made. The philosophy of the general movement and the significance of influences here and there have not been subordinated to the mere narrative or to catalogues of dates, names and wars. The cuts and maps are fresh, clear, and abundant. A synopsis for review follows each chapter. The index is unusually copious. [American Book Co., 610 pages, $1.50.]

There have come to our table three new volumes of the "Twentieth Century Text-Book" series. The *Sir Roger de Coverley Papers* are edited by Franklin T. Baker of Columbia university and Richard Jones of Vanderbilt university. It is refreshing to find that the editors regard these papers rather to be read and enjoyed than minutely, critically studied with learned and labored comment. The introduction of 84 pages explains the social and political conditions which gave to the papers a significance at the time, and a knowledge of which makes them for us to-day more than a mere portrayal of scene and character. The notes are sufficiently copious for the purpose. All the papers are included except the one by Tickell.

Another volume contains *Milton's Shorter Poems and Sonnets*. They are arranged in chronological order, and edited by Frederick Day Nichols of the University of Chicago. The introduction has a biographical sketch of Milton, and some critical study of his work, especially of the shorter poems. The page of the text is commendable for its clearness. The shorter explanations appear as foot-notes, the longer ones being gathered at the back of the book.

Macaulay's *Essays on Milton and Addison* are edited by George B. Aiton, Minnesota inspector of high schools. Nearly the whole volume is devoted to the text of the two essays. There is a brief sketch of Macaulay's life, and a word about his style. The notes are limited to seven pages, but the editor recommends the generous use of encyclopedia and dictionary. These books are published by D. Appleton & Co., New York and Chicago, 40 cents each.

All who have gone with Frank G. Carpenter, the celebrated traveler and newspaper correspondent on one of his "personally conducted" tours will be glad to know of another, just out, through *South America*. With Mr. Carpenter as guide and interpreter, the reader makes a survey of each of the countries of South America; he explores the vast rivers, visits the chief cities, and takes note of the curious manners and customs of the different peoples. He sees many strange animals, the llama, the alpaca, the tapir and the jaguar; visits the plantations where cacao or chocolate is raised, learns how rubber and quinine are obtained, and where nitrate comes from. He meets the descendants of the Incas, learns something of Pizarro's conquest of Peru, and finds out how Rio de Janeiro

got its name. The good thing about it all is that Mr. Carpenter has been there, and the descriptions and narrations he gives us are first hand. [American Book Co., 352 pages, 210 illustrations, 60 cents.]

"To put into one handy volume a goodly portion of Shakespeare's English history," is the expressed aim of Dr. J. J. Burns in compiling *English Kings According to Shakespeare*. "Compiled" may not be quite the word, for wherever connective matter was necessary to complete the narrative the author has supplied it. Careful study has convinced him that the common admission of the way in which the great dramatist used to distort historical facts to suit his purpose is not well founded. He believes that if an attempt were made to-day to recreate the English kings from authentic history they would be less true to life than those of Shakespeare's plays. If this is so Dr. Burns's book will be welcomed as an aid to the study of both history and literature. The kings treated are Richard II., Henry IV., Falstaff, as king of the realm of humor, Henry V., Henry VI., Edward IV., Richard III., and Henry VIII. [D. Appleton & Co., 272 pages, $1.00.]

A book that will be of peculiar interest to teachers of Indiana is *Gleanings From Nature* by state geologist W. S. Blatchley. Those who are familiar with the close way in which the author is accustomed to look at things will appreciate his statement that these gleanings are "based upon studies made in the fields and woods of the Hoosier State during the past ten years." Readers may expect to find a series of interesting studies of common plants and animals that is not technical and is yet accurate and reliable. This fact will bring it also within the reach of a large number of Hoosiers whose occupations preclude their becoming scientific students. Indeed one of the author's purposes is to arouse such an interest in the ordinary things of country nature that young men and women will be more content to stay there. The book is well illustrated. [The Nature Publishing Co., Indianapolis.]

How the deed comes back to the doer and how kindness is repaid whether shown to human beings or to animals is illustrated in a very well told little story by Mrs. C. F. Fraser, entitled *Strawberry Hill*. The interest centers in a boy who goes to live with his aunt on a strawberry farm, and learns there both by example and precept the virtue of kindness. One might almost call it a companion to *Black Beauty*. [Thomas Y. Crowell & Co., 50 cents.]

Under the title, *Stories of Insect Life*, Mary E. Murtfeldt and Clarence Moores Weed have gathered a series of simple, interesting studies of the nature and habits of the more familiar insects. Katydids, slugs, firefly, moths, caterpillars, ladybird, beetles, tomato-worms, etc., are included. The illustrations are clear, and the interesting manner of treatment commends the stories for early nature-study. [Ginn & Co., 35 cents.]

Things as They Are, by Bolton Hall, is a remarkably terse and pointed putting of the principles that rule in the social and commercial world to-day. It extenuates nothing; it shows how things must appear when men are honest with themselves and ask to know the truth; it shows either that self-preservation is no longer the first law of life, or else that honesty is not the best policy; it shows that under the present arrangement the golden rule does not work. There is neither sophistry nor philosophic discussion in any of the chapters; rather is it like the drawing back of the curtain and letting us see the play in which we ourselves are the players. It is cordially commended to all who dare to open their eyes, to all who are not afraid of the best socialism, pure and simple. The latter half of the book is made up of fables. [Small, Maynard & Co., 293 pages, $1.25.]

If there is any one man who is peculiarly qualified more than another to speak of the American negro it is Booker T. Washington, well known as a public speaker, and as the president of the Normal and Industrial Institute at Tuskegee, Alabama. Besides his addresses, Mr. Washington has also been a frequent contributor to the leading periodicals, and his new book, *The Future of the American Negro*, is an embodiment of his thoughts and ideas, already expressed. It is to be hoped that in this form they may find a still larger audience. One will not read far nor listen long before finding that the writer is keen and incisive, that he grasps clearly the whole negro problem, and that his plans for its solution are worthy of the closest attention. The book is intensely interesting whether the reader is in sympathy with the subject or not. [Small, Maynard & Co., 244 pages, $1.50.]

It seems trite to say that there are books and books, but since the day when Charles Lamb uttered that paradox about books that are no

books there has not been a time when so much care was bestowed upon the making of fine books for all who like them, as just now. Laurence Hutton has said of the Roycroft books "Just to hold and caress such a book is a joy." When the old Venetians made their elegant volumes the luxury was for the few. The Kelmscott Press, the Roycroft Shop, and even Mr. Mosher of Portland are not yet within the reach of all, though we heartily wish they were. But the substantial, gratifying thing is the growing abundance of really fine books at modest prices. We are coming to know that a bundle of printed leaves between two covers does not of necessity make a book worthy the name. The art in type, the art in paper, the art in binding, illustration, and design, are all worth while, not less than the art in the literature itself. These observations are suggested by the series of dainty little *Beacon Biographies* edited by M. A. DeWolfe Howe. The titles of those already published were named in THE EDUCATOR for December. These books have many points to commend them:—They are small enough to slip easily into the pocket, they appeal to the reader's artistic sense, the clear type makes the reading itself delightful, the subjects are men eminent in American life, the sketches are brief and dwell most upon personal characteristics, each volume is prefaced by a photogravure of the subject. Happily the number of distinguished Americans is large, and we may hope that the publishers will feel justified in making the list of these little biographies a long one. [Small, Maynard & Co., 75 cents each.]

As a soldier in the U. S. army from 1857 to 1874, as the companion of Col. Cody and Kit Carson, as a famous Indian fighter, and as a man devotedly attached to the Rocky mountains and the great western plains, Colonel Henry Inman wrote his tales of romance and adventure from a full heart. The volume before us, *Buffalo Jones' Forty Years of Adventure*, is described as "A volume of facts gathered from experience, by Hon. C. J. Jones, whose eventful life has been devoted to the preservation of the American bison and other wild animals; who survived the perils of the frozen north, the land of the midnight sun, among Eskimos, Indians, and the ferocious beasts of North America." The very rapid march of civilization westward makes it seem incredible that only thirty-five years ago there were great herds of buffalo on our plains where to-day there are none. Yet this is true, and the record of the attempts made by "Buffalo Jones" to preserve some of these wild animals as a characteristic of native, primitive North America, is of surpassing interest both as literature and as history. The book is richly illustrated. [Crane & Co., Topeka, Kansas, 469 octavo pages, $2.00 postpaid.]

In the *Atlantic Monthly* for October President Eliot of Harvard shows that there has been a large increase in the number of studies which the colleges accept as preparation for entrance. This suggests that in each of those subjects correspondingly better work must be done in the high school, and in fact this is the case. It has been seen that the superficial knowledge of any subject was hardly worth a student's while, whether he intended to go to college or not. Hence, the best schools reduce the number of studies which any one student may take, but at the same time require a more substantial knowledge of whatever may be selected. The movement has been from extensive to intensive. Among the recent books to encourage that movement is *The Teaching Botanist* by Wm. F. Ganong. It is not a text-book; it is not adapted to class use. The writer seems to have guessed, somehow, that not all teachers of botany are well grounded in their subject; and, with a desire to see a growing interest in botany, he attempts to supplement the teacher's knowledge by a series of essays on the methods, principles and theory of teaching botany. The first group of essays is pedagogical, and considers the educational value of botany as a science, together with the best means of realizing that value. The second group considers the principles and really constitutes a treatise in outline on the science itself. The book will meet a peculiar want of many teachers, supplementing their own knowledge of the subject and the material furnished by the text-book used. [The Macmillan Co., 270 pages, $1.10.]

A book that is quite in keeping with modern methods of teaching history will be found in *A History of England* by Katharine Coman and Elizabeth Kimball Kendall, professors of history in Wellesley College. Racial influences, physical conditions, colonial policies, commercial relations are the factors that are chiefly considered in the making of the British Empire of to-day. The entrance requirement of leading colleges has also been kept in mind in the preparation of the book. Much of the familiar record of English wars is omitted on the principle that only those movements should be here considered which "affect industrial prosperity, constitutional tendencies, or international relations.

The chapters on the "Growth of Democracy" and "Industrial Revolution" are particularly interesting and suggestive. It is evident throughout the volume that the writing has been done from the American point of view. Three lists of books numbering twenty-five, fifty and seventy-five volumes respectively, suitable aids in the study of English history, will be appreciated. One other commendable feature is the series of marginal notes referring the student to particular readings by volume and page. [The Macmillan Co., 507 pages, $1.25.]

Professor L. A. Sherman, university of Nebraska, has edited an edition of *Macbeth* in which he states as his main purpose "to aid teachers in securing for their pupils first-hand knowledge of the ethic and æsthetic meanings" of the play. To this end he considers it advisable to offer consistent help in the way of appreciating Shakespeare's diction and explaining remote allusions. The author seems conscious of the danger of over-editing, and while his notes are copious, some seventy pages, yet the addition of nearly thirty pages of questions shows the room he leaves for suggestive study. A few pages are devoted to a critical estimate of Shakespeare's work and to "Suggestions to Teachers." Considering the value of Macbeth as an introduction to the study of the great English dramatist, this well-edited edition will be welcomed by many teachers. [Henry Holt & Co., New York.]

Ludwig Kotelmann, Ph. D., M. D., is a schoolman by inheritance and by practice, a physician, a journalist, and a scientist, These varied qualifications peculiarly fit him for the preparation of such a work as his *School Hygiene*, published in German and recently translated by John A. Bergström and Edward Conradi of Indiana University. The translator remarks in an introductory note that in a work on hygiene involving architecture, sanitation, psychology, pedagogy, there is great danger of one-sided treatment; that it might be scholarly yet not practical, and comprehensive without proper balance, proportion and connection. Dr. Kotelmann's treatise, which appeared first in 1895, and has since been revised, has already won distinction as a remarkably clear, practical, scientific discussion. The various kinds of seats and desks, ventilating devices, heating apparatus, lighting, cleaning, programs, sight, hearing, sitting, speaking are all discussed in a particular and specific way, not in broad generalization. The teacher who reads the book soon finds that the author's purpose is to provide for the pupil an atmosphere of health and the best conditions for work. There is appended an extensive and valuable bibliography. [C. W. Bardeen, 300 pages, $1.50.]

The author of *The At-One-Ment*, in a discourse of 500 pages, considers various questions that are interesting to all bible students, such as the character of the Heavenly Father, the pre-existence of Christ, his holy birth, the fall and ransom of man, and the character and operation of the Holy Spirit. It is quite likely that theologians of the old school will think it heterodox, while the higher critics will think many of the interpretations too literal. It is certain that the writer has positive convictions and that these are founded upon the Scriptures. This is a book to awaken thought whether the reader agrees with its doctrine or not. [Watch Tower Bible and Tract Society, Allegheny, Pa., cloth 60 cents, paper 25 cents.]

Americans will be likely to attend in large numbers, has given at least a temporary increase of interest to the study of French. The result is seen in newly formed classes for the study of French and in numerous books with short courses. In distinction to these there are the more substantial courses providing for a more thorough study of the language. Here must be classed Kroeh's three year *Preparatory Course*, the third volume of which has just appeared. It consists chiefly of reading exercises, though there is a timely review of grammatical principles, and much attention to word study intended to illustrate idiomatic uses. This last named feature is particularly valuable, and will surely aid the careful student to clear away many small but perplexing difficulties. The course is considered to be complete and sufficient for all except special students, and the author's claim that he has utilized all the best methods seems to be well founded. [The Macmillan Co., 388 pages, $1.00.]

Induction as applied to argumentative writing is the basis of method in a little book by Gertrude Buck, Ph. D., entitled *A Course in Argumentative Writing*. The student's own construction and a rough analysis of arguments precede the formulation of any principles of persuasion. The material to be used for such analysis and for the derivation of principles should be such as belong to daily experience. The fairness of a certain examination is a better theme at first than the advantages of a protective tariff. The

method of the syllogism is the natural one, not only logical but psychological in that each argument is referred to its antecedent. Such are the principles upon which the author bases her work. The various forms of argumentation, inductive, deductive, a priori, a posteriori, analogy and a fortiori are presented in order, the examples being, for the most part, simple. It is in this simplicity and the many examples for study that the value of the book consists. (206 pages, 80 cents.)

Another book by the same author, in collaboration with Elizabeth Woodbridge, Ph. D., is based on similar principles. This is a course in *Expository Writing*. An opening sentence in the preface to this book is significant, and to the extent that it characterises the plan of the book is most commendable. "One of the difficulties which an English teacher has to meet is the no less fundamental one than the difficulty of getting his students to write at all—to write, that is, not perfunctorily, but spontaneously, for this is the only kind of writing that counts." An examination of the book shows that it provides directions for much writing of this kind. The many selections for study and analysis show fine discrimination in choice. (206 pages, 80 cents.) Both volumes published by Henry Holt & Co.

A book that will be found helpful to students and teachers of German is Poll's *German Prose Composition*, of which the best feature is the interesting character of the exercises chosen for translation. Most of them are originally from the German, and are classic. The large vocabulary (168 pages) by Professor H. C. G. von Jagemaan of Harvard, accompanies the exercises. [Henry Holt & Co., 90 cents.]

Schrakamp's *Supplementary Exercises*, designed originally to accompany "Das Deutsche Buch", by Schrakamp and Van Daell, is now published separately. The design appears to be to furnish an abundance of simple German exercises for drill in the various parts of speech. [Henry Holt & Co., 110 pages, 50 cents.

Numbers 135 and 136 of the "Riverside Literature Series are devoted to Chaucer and include the *Prologue*, *Knight's Tale* and *Nun's Priest's Tale*. The editing is by Frank Jewett Mather, Jr., of Williams college. The fact that so many of the annotated studies in Chaucer contain only the prologue will make this edition welcome to many students and teachers who have wished to know well more of the Canterbury Tales. The Introduction of forty-five pages gives the life of Chaucer, his literary development, the plan of his great work, his genius, and a discussion of the pronunciation and metre. Not the least valuable feature is the twenty-seven-page glossary. The notes, as usual, are at the foot of the page. [Houghton, Mifflin & Co., 15 cents each.]

In Appleton's "Home Reading Series" one of the late books, by Edward S. Holden, is in the form of "Conversations with a child," and bears the title *The Family of the Sun*. It is a continuation of the author's former volume "Earth and Sky." Although told to a child, in a simple manner, these "talks" are richly instructive and so interesting that many an older person will be glad to read them. It is a simple set of studies in astronomy, as the title suggests, describing the relations of the planets to each other and to the center of our system, the sun, and giving much information about each member of the system. [D. Appleton & Co., 252 pages, 50 cents.]

EDUCATIONAL, LITERARY AND GENERAL ITEMS.

Superintendent Finley Geiger of Blackford county, Ind., reports that his Thanksgiving association was a grand success.

Among the bright papers published by students, *The High School Patriot* of Seymour, Indiana, is worthy of special mention.

P. V. Voris, formerly superintendent of the Danville schools is doing advanced work in philosophy and pedagogy at Indiana university.

Professor E. E. Griffith, associate professor of English in Indiana university, has a year's leave of absence which he is spending in New Mexico for the benefit of his health.

Mr. Chas. A. Williams, a well known Harrison county teacher, has secured a fine position in the Census office at Washington, D. C. He writes that he still wants THE EDUCATOR.

Superintendent W. A. Wallace has issued his yearly manual for the Daviess County (Ind.) schools. It is well filled with rules, advice, information, statistics, etc., and suggests careful and intelligent supervision.

The Spencer county teachers held both their institute and association during Thanksgiving week, and report the meetings among the best ever held in the county. Dr. R. J. Aley and Mrs. McRae were the instructors.

Superintendent Mark Moffett of Waveland, Ind., sends a copy of his annual report. Judging from the course of study and directions to teachers, the work is well organized. Next year the high-school course is to be increased from three to four years.

Mrs. Margaret E. Sangster, who for over ten years has been the editor of *Harper's Bazar*, has resigned that position and joined the editorial corps of *The Ladies' Home Journal*, in which magazine she will hereafter conduct a permanent department.

Professor R. J. Aley has published a pamphlet containing an extended discussion on "A New Triangle and Some of its Properties." The study was presented at a recent meeting of the Indiana Academy of Science, and will surely be of deep interest to mathematicians.

Frank N. Doubleday and S. S. McClure dissolve partnership, Mr. McClure to continue the publication of the McClure Magazine and other business of the firm, while Mr. Doubleday embarks with other well known New York publishers in an enterprise under the firm name of the Doubleday-Page company.

A very full and interesting manual just received is that from the Covington (Ind.) schools. In addition to the usual announcements and a well-balanced course of study, there are various items of general information regarding athletics and clubs, etc. The pages are enlivened by numerous full-page half-tone cuts.

A very successful meeting of teachers and parents was held at Valentine, Ind., Dec. 16. The sessions were well attended by parents who have hitherto shown little interest in school matters. A good half of the program was rendered by them. Principal Homer Myers thinks the interest awakened means much good to the schools.

The Macmillan Company, New York is commencing with January, 1900, the publication of a new periodical called *The International Monthly*. It is to be "a magazine of contemporary thought," and the contents of the first number are by such distinguished writers as Edouard Rod, N. S. Shaler, John Trowbridge, and Norman Hapgood.

A young Hoosier poet who is becoming quite well known is Alonzo Leora Rice of Rays Crossing, Indiana. By some critics he is classed with Riley in his love of nature and his tender regard for humanity. Mr. Rice edits the poet's corner of *The Sunny South*, and is himself a most prolific writer. Readers of THE EDUCATOR have the promise of something from his pen at an early date.

Readers of Professor Greenlaw's excellent articles on Literature will be interested to know that he can furnish *Studies in Macbeth*, in pamphlet form, at twelve cents each, postpaid, or $1.25 per dozen. Competent critics have expressed a high opinion of these studies. Address E. A. Greenlaw, Northwestern university, Evanston, Ill.

Superintendent W. S. Gibbons of Fulton county, Indiana, asked the teachers of his county to observe the afternoon of December 20 as Book Day. The idea seems to be a new one, but has numerous things to commend it. The wanton destruction and marring both of books and of furniture is hoped to be lessened by the celebration of this new day in our special calendar.

A census of the students at Indiana university this terms shows that sixty-four per cent. are church members. The total number enrolled this term is 632, which is the largest fall term's attendance in the history of the institution. Of this number there are 122 Methodists, 112 Christians, sixty Presbyterians, eighteen Baptists, sixteen Catholics, fourteen Friends, ten Episcopalians, and fifty-four who belong to various other churches, from one to four each.

The *Journal of Education* celebrated its twenty-fifth anniversary December 7, 1899. Its special issue was devoted largely to a review of the educational progress during this period. The fact that this review was made general in its scope, and that it was not limited merely to the growth of the *Journal* may be taken as a mark of the *Journal's* largeness of spirit. Beginning with New England it has grown to be national both in circulation and in character. Dr. A. E. Winship, the long-time editor, is a real power in the schools of America.

Salem, Ind., sustained a severe loss on December 5, in the burning of its graded school building. The fire is supposed to have started in the furnace room. Although the structure had been standing a good many years it was in fair condition. The insurance was not sufficient to meet the loss, but as soon as it can be adjusted work will be commenced on a new building. Meanwhile Superintendent Wilson and the school board are trying to accommodate the 300 pupils from this building in various rooms that have been freely offered for temporary use.

By the courtesy of President Swain of Indiana university we have a copy of the proceed-

ings of the fourth annual conference of the Indiana Science Teachers' Association. The chief features are the several papers,—one by E. A. Schultz, Fort Wayne, on *The Relation of Secondary Science Teaching to that of the College and the University;* one by A. B. Crowe, Fort Wayne, on *Science Study and National Character:* one by Thomas Large, Evansville, on *Zoology as a High School Study;* one by J. P. Naylor, on *Physics as a High School Subject;* and one by John Le May, on *A Proposed Revised Course of Study for Indianapolis.*

The sixth annual session of the Jackson county teachers' association was held at Brownstown, Dec. 1 and 2. It was considered the best meeting in the history of the association. The President addressed the sessions on general pedagogy and literature. Serious complaint was made that some of the city schools were so inadequately represented. It may be added that similar complaints come from other counties, and it might be suggested that if city teachers feel their self-sufficiency, and hence no need of the county meetings, they may owe something to fellow-teachers who have been less favored.

Indiana University has recently received donations from two distinguished citizens of the United States, one a democrat and the other a republican. Hon. Wm. Jennings Bryan has donated the sum of $250, the interest on which is to be applied annually as a prize for the best essay by a student of the university on some subject connected with the science of government. Hon. John Watson Foster has donated the sum of $500, the interest on which is to be applied annually as a prize for the best essay by a student of the university on some subject connected with the political development of the United States.

The department of the interior has recently published a wall map of the United States, prepared under the direction of the commissioner of the general land office, 4 feet 11 inches by 7 feet 2 inches in size, mounted on muslin and attached to rollers ready for immediate use. In addition to the features ordinarily characterizing maps of the country, on this are shown by clearly defined boundaries, the several acquisitions of territory upon this continent by the government of the United States as determined by the latest investigations, together with all military, Indian and forest reservations. It is supplied by the department at eighty cents per copy, the cost of printing, mounting, etc. The law permits the sale of only one copy to any individual, but to schools and other institutions as many copies can be furnished as are desired for separate buildings or departments. All remittances in payment for maps should be by draft or postal money order made payable to the order of the financial clerk, department of the interior.

It is fitting enough that helps to the study of the Bible should keep pace in their progress with that made in other branches of literature and study. It is not many years ago since the bare text was the whole Bible. Now, besides extensive marginal references to a self-pronouncing text we find copious analytical and explanatory notes and summaries of the several books; historical, chronological and geographical tables, a harmony of the gospels, Paul's missionary journeys; values of weights, measures, time and money; index, concordance, dictionary of proper names; maps, &c., &c. All this in an Oxford cover, and all in fine type! If you need a Bible it will pay you to answer the advertisement of Button & Craft in the December EDUCATOR.

The December *Atlantic* might in some senses almost be called a Chicago number, for three of the most striking and salient articles are by Chicago authors. Harriet Monroe's "The Grand Cañon of the Colorado" is a brilliant and effective sketch of nature and natural scenery; Mrs. Elia W. Peattie's lively "The Artistic Side of Chicago" pictures the æsthetic, artistic, educational, and literary features of the great city, while the short story "The Detectives," by Will Payne, is a capital example of the power of Chicago writers in romantic fiction. Chicago has reason to be proud of her contributions to this number of the representative magazine of America.

Two powerful multi-millionaires who were recently determined to start Sunday editions of their daily papers, the *Daily Telegraph* and *Daily Mail*, in England, were defeated in this attempt in a struggle that was as significant as it was remarkable. John Burns, the agnostic labor-leader; the Archbishop of Canterbury, the Bishop of London, Lord Kinnaird, Cardinal Vaughan, Cohen, a well-known Jew; Sir Mark Stewart, of the House of Commons, and a number of other members of Parliament were among those who joined in this memorable campaign. A stirring account of the affair for *The Sunday School Times*, appeared in its issue of November 25.

A READING NOTE-BOOK.

One of the most unique ideas in the way of a help for teachers and at the same time one of the most valuable is the extra number of THE INLAND EDUCATOR, which is given free to all paid subscribers. It is written with special reference to the revised Indiana Readers but teachers of reading everywhere will find it full of suggestions. It is arranged in the form of an encyclopedia, the name of every author and the title of every selection being entered. The chief facts in the author's career are given and in most cases there are hints for further reading and biographical study. The main effort has, however, been expended in connection with the selections themselves. The circumstances connected with the writing, hints on the meaning or content, a series of questions designed to help a class in getting at this meaning and a few carefully prepared notes on passages likely to give trouble to the student are given in each article. In the judicious teacher's hands it becomes a great source of suggestion and inspiration. By printing in the regular form of THE EDUCATOR we have been enabled to put a maximum of material within a minimum of space. This "Note-Book" was prepared by Professor Chas. M. Curry. Since we began sending it out a few weeks ago many commendatory letters have been received from teachers and superintendents, all speaking in the highest terms of the helpfulness of this book. We take the liberty of quoting two of these letters:

From Lawrence McTurnan, County Superintendent Madison County, Anderson, Ind.

I wish to say this aid to the teacher deserves the highest commendation from the teachers and pupils for whom it was written. It is a great help to me and I am sure will be appreciated by the teachers of the state. Please allow me to congratulate you upon this work.

From W. A. Millis, Superintendent Attica City Schools:

I have just received the "Reading Note-Book" from your press, and congratulate you on the enterprise. It is a happy thought. The supplement will be of great value in the reading work of the Indiana schools. I shall take pleasure in calling the attention of my teachers to its value.

How to get this READING NOTE-BOOK. { *Simply remit the amount due on your subscription to* THE INLAND EDUCATOR. *The "Note-Book" will reach you by return mail. If not yet a subscriber become one, pay for one year, and receive the book.*

THE INLAND EDUCATOR.

A JOURNAL FOR THE PROGRESSIVE TEACHER.

WALTER W. STORMS, Editor.

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A JOURNAL FOR THE PROGRESSIVE TEACHER

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Departments: Primary, Flora J. Cooke
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THE INLAND EDUCATOR.

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VOL. X. FEBRUARY, 1900. No. 1.

Educational Creeds. Page 6 of this issue introduces a plan which we hope to continue for some time. It has seemed that a brief and concise expression of what representative men think the schools should do for the child would be of great interest and value to teachers. It is a pleasure to commence the series with the picture and creed of Howard Sandison, vice president of the Indiana State Normal School.

* * *

Cook County Schools. The article in this issue by Charles W. Farr, assistant superintendent of schools in Cook county, Illinois, will be of large interest to every county superintendent, every school director and every rural teacher who may read it. Cook county is making a special effort to raise the standard of the rural schools, and the plans here outlined show the beginning of the work.

* * *

One-Man Power. The feature of the Illinois state meeting at Springfield, December 27, that has been most talked about is an address by Graham H. Harris, president of the Chicago board of education. His subject was "One-Man Power in School Administration." The general feeling is that the address was designed to create sentiment against Superintendent E. B. Andrews, who has attempted to exercise certain powers which Mr. Harris claims should not be placed in the hands of any one man. It is but fair to say, however, that Dr. Andrews' name was not mentioned in the address. From the standpoint of a teacher Mr. Harris's position seems unreasonable. He assumes that no one man's judgment is nearly enough infallible to be trusted in such matters as the selection and appointment of teachers, and the choice of text-books. He assumes, too, that the temptations to dishonesty are almost too great to be resisted. "Thousands of dollars are spent each year by the board for school books, and hundreds of thousands each year by the parents of pupils attending schools for books selected by the board. Give one man the power of selecting these books, and a four or six-year term, and if he proves dishonest, or even listens to the blandishments of book agents, he can retire at the end of his term with a very fat competency, which he did not save out of his salary." Such a theory consistently followed out is a practical refusal to put confidence in anybody, and in the commercial world would mean the stagnation of business. Most superintendents have some regard for a fair name. Where one here and there lacks self-respect and principle and honor he soon finds himself without a place, or else holds his place by virtue of a board of spoilsmen. But the average superintendent is honest and honorable, and there are some things which he can necessarily decide more wisely than any school board. And is it not true, as a matter of history, that school boards are more easily corrupted than superintendents, just exactly as city councils have shown themselves more susceptible to bribery than mayors? Both superintendent and school board are in the end, indeed, answerable to the people, but Mr. Harris confuses absolutism with representative government. His argument against placing power in the hands of a superintendent is an argument against placing it in the hands of a school board.

* * *

Brief Items of Current History. Two items are to be recorded relating to Cuba. One is the appointment of Major-General Leonard Wood to succeed General Brooke, as governor-general of Cuba. General Wood has demonstrated his peculiar fitness for the position by the way in which he has administered the affairs of Santiago since the close of the war with Spain. The fact that considerable political pressure was brought to bear against him makes the appointment all the more gratifying. The other item is the selection of Alexis E. Frye to organize a

system of education for Cuba. Professor Frye is best known as the author of Frye's geographies, but the fact that he has had several years' experience as a normal school instructor, being associated in that work with Colonel Parker, makes it reasonable to think that the work will be well done. The Cubans are displeased because the appointment went to a foreigner. Affairs in South Africa have been watched with deep interest by all the world. To those who were not familiar with the strength and equipment of the Boers their decisive victories at Stormberg, Magersfontein and Colenso, were most surprising. Generals Buller and Methuen were not only too confident but were entirely outwitted. The depression produced in London by the succession of reverses was followed by immediate steps to increase the English army until it will reach 150,000. General Roberts, who is sixty-seven years old, and who has never known defeat, is now chief in command, and General Kitchener who lately won fame in Khartoum, accompanies him. President Kruger is reported to have said, "If Great Britain gets the Boer states I will make her pay a price that will stagger humanity." It begins to look as if Kruger knew what he was talking about. There was hard fighting at Ladysmith and other points early in January, but up to the time of closing this record no decisive results were announced. An act of Great Britain that awakened vigorous protest at Washington was the seizure of a cargo of American flour at Delagoa bay. The American minister at London, Mr. Choate, made representations to the British government and the seized vessel was ordered released. The protest was made on two grounds, namely, that no proclamation of a blockade had been made, and that flour is not contraband of war. In the partition of the Samoan islands by the United States, Great Britain and Germany, the island which falls to the United States is Tutuila. The value of this island, being but fifty-four square miles in area, lies in the fact that it contains Pango Pango, the best harbor in the south Pacific ocean. Pearl Harbor in the Hawaiian group is said to be the next best harbor. It is said that Pope Leo has designated as his successor Cardinal Gotti, a Genoese monk who has always lived a stern and rigorous life, sleeping in his cell on a hard mattress. He is about sixty-four years old.

* * *

Summing Up. As we approach the end of the century periodicals of every kind are bound to indulge in retrospection. Artists will be interested in reading what the century has done for art; the church will ask what progress it has made in the last hundred years. Agriculture, manufactures, and all the industries will ask the same question, and find on summing up that no other century of the world's history can equal the nineteenth, in progress. And this is emphatically true for education, especially in America. In 1801 only a small percent of the whole people could read and write; scholarly men were rare; we had but thirty colleges with some two or three thousand students; many homes had no books, many others had but a very few, and private libraries of even moderate size were almost unknown. We had no periodicals, and the tremendous power of the daily press had not yet begun. Now we count 500 colleges with over 150,000 students; and with facilities increased a hundred fold; public schools are not only free but attendance at them is compulsory; not only the ability to read and write but average intelligence is general; where men and women could not go to school the Chautauqua, the study club, and the university extensions have brought the schools to them; we have the kindergarten, and associations of all kinds from the district and township meeting to the N. E. A., and at the same time an enormous volume of literature—the daily press, the weekly and monthly magazine, and a plethora of good books that would educate us liberally, even if all other educating influences were withdrawn. The century is closing with a phenomenal progress in education, and it is education that in turn is aiding progress in every direction. It is a new renaissance, which in centuries to come will cast that of the fifteenth century into shadow.

* * *

Association of Indiana Teachers. With the president's address in the January issue, an excellent paper in this issue, by W. E. Henry on libraries, and Professor Waldo's paper on "Mathematics and Progress" promised for March, readers of THE EDUCATOR will have a fair sample of the good things furnished to the teachers who found it possible to attend. Notwithstanding the very commendable plan of requiring the payment of fees before admission to the general session, the attendance was large—more than the hall of representatives could comfortably accommodate. The noticeable feature of the meeting was the interest taken in it by persons not directly interested in school work. The same thing has been noticed in reading reports of meetings in other states. This is a wholesome

indication and points to a closer sympathy between the people and the schools.

* * *

Art in the Schools. It is more than a mere coincidence that several of the leading periodicals have recently had articles touching the various phases of art in education. The address of Superintendent W. H. Glascock as president of the Association of Indiana teachers was altogether timely. As if by common consent the schools have commenced a campaign that bids fair to create an intelligent taste for the best there is in art. *The Outlook* says "The instinct for art once aroused, the rest depends upon development and cultivation. From instinct to education is a long step, from education to culture a longer one, and from culture to art a far stride indeed. . . . The special care of the artistic faculty, in training it to appreciate and apraise the values of true art, even in illustrations, has been unduly neglected in our public schools." An awakening has come, however. The Perry pictures, the Witter pictures, the Art-Study pictures, the Elson prints, are within the reach of every school. A new departure in the Riverside series brings art studies also within the means and the scope of even the rural schools. These are interesting signs of an improved taste and bespeak a large art development among all the people. We have as yet but little to boast of. We are just commencing to educate, but the commencement is so vigorous that appreciation is sure to come, and then, in due time, culture and a true art.

* * *

Teacher and Community.

During the last state meeting of Indiana teachers there were not a few evidences of growing sympathy between the school and the community. Hon. John L. Griffiths and Rev. F. E. Dewhurst had prominent places on the program as laymen. Mrs. May Wright Sewall, in a paper on "The Relation of Society to the School", emphasized the importance of making these relations closer, and showed how the isolation of teacher and school from the community resulted in mutual detriment. At least three of the Indianapolis dailies, besides giving the usual generous reports of proceedings at the various sessions, printed prominent editorials emphasizing just this phase of relationship and interest. *The Press* said "The growth of the child's character is a *constant* process. It cannot be carried on during the hours at home and suspended during the hours at school. . . . The public school teachers are the pioneers of good citizenship, the promoters of social order. . . . The public appreciate more and more the importance and necessity of their work. . . . In order to be an efficient help to the duties of life, especially those to the state, education should go far enough to measurably ripen the mind and broaden the view. It should also be moral as well as intellectual. . . . As civilization advances its problems become more complex, and the right understanding of social and civic duties involves more and wider study by the young".

The News also had some editorial thoughts that seem worth quoting. Referring to the convening of the association, it said "The questions to be discussed are questions in which every citizen of the state is interested. For it is of the greatest importance that every citizen should have at least the rudiments of a good education, and thus the function of the teacher can hardly be too highly esteemed. . . . The work of teaching bears so intimate a relation to practical affairs and to the conduct of life, that we venture to express the hope that our teachers may gradually come to regard their work a little more from the outside point of view. They certainly should never regard themselves as constituting a class apart, for it is only when they keep in close touch with the great world forces that they are able to do their best work. It is not enough for them to know about the science of teaching—though, of course, they must know life and people, and be filled with a sympathetic interest in humanity. Education is not a matter of rules and dogmas, but of inspiration. One can imagine a good teacher practically ignorant of theories of pedagogy, but not one who is ignorant of life and of the movements of the time."

Now it is well understood that the daily press must and does fairly represent public sentiment. And the time has been when a paper that would devote columns to a prize fight would dismiss an educational convention with a mere paragraph. The proceedings of the teachers at their last meeting received each day more attention in the newspapers than did the republican "love feast." This is both gratifying and significant. It expresses the growing public interest in things educational, and a better appreciation of the teachers and their work. The

same spirit is shown by the large attention which the best periodicals of America have devoted during the year or two just passed to education in all its phases. It is a most hopeful sign. This public interest will, in turn, affect the teachers themselves. So long as the community was satisfied with narrow, circumscribed, self-centered teachers, so long it had them. When it demands men and women alive with interest in all social relations such teachers will be at hand for the larger work.

* * *

February Patriotism.

The month of February, containing the birthdays of two great American statesmen and of at least one favorite poet, offers the best time in the year for the teaching of patriotism. Public opinion is unanimous in thinking it a part of the teacher's duty to instill patriotic ideas; and so it is pertinent at this time to ask What is true patriotism?

Professor Woodrow Wilson of Princeton, in a very able discussion of "Spurious as contrasted with Real Patriotism in Education", makes it very clear that patriotism is a kind of national nobility that is most nearly akin to unselfishness. "When we say that a man is noble we mean that he serves something besides himself; that he has, if I may express it, a margin, a surplus, a free capital of character, which he can expend in undertakings which are for the general welfare as well as in undertakings for himself. He is not consumed and used up in serving himself; there is a generous remainder which he is ready to share with his neighbors and with his fellow citizens and with his friends. . . . It seems to me that it is but an extension of these same terms when we speak of patriotism. Patriotism is the fine unselfish exercise of energy".

According to this view, then, patriotism is much more than a weak sentiment which is apt to smoulder in the public mind most of the year and to warm into a flame on special occasions only. It is more even than the *expression* of a sentiment. A man may be eloquently patriotic until the actual test comes and finds him cowardly, selfishly unpatriotic. The soldiers and sailors who are not called into action during times of war may be just as brave, just as ready to battle and die, as those who are in the thickest of the fight, but it is to the troops who come home scarred in the service that we take off our hats. These have proven themselves. So the essence of patriotism appears to be service, duty. It may long be potential, but it must become actual whenever the occasion arrives.

But while it seems clear that patriotism finds its true expression in service we must bear in mind that the military service mentioned is but a very small part of a man's duty to his country. Happily it falls to the lot of but few in America to serve with gun and sword, and the periods of such service are usually short. But the flag should stand for principle more than for arms. This must be doubly true under a democratic form of government; and in teaching children to honor the flag we should teach that the army and navy together constitute only one of our national institutions.

We should teach that the school, which continues its work steadily, year after year, is a vastly greater institution than that of the army and navy which may be called into action only during times of national danger. We should teach the meaning, the value, the sacredness of the home. We should teach the meaning of law, the necessity for law, and the importance of obeying the law. Every boy and every girl should know the process of law-making, not only in the nation and the state but in the county and the municipality. They should be taught what a farce government by the people becomes when its management is indifferently left to the professional politician. They should be taught the significance of the free ballot, and every voter's duty in a government by the people. But the greatest lesson of all is the one that will teach self-government. The man who is willing to make his personal advantage subservient to the good of the community is likely to make the best citizen. And the nation of citizens who seek earnestly the best good of home, school, community and state will be the nation in which government by the popular will is most nearly possible. It is this importance of individual self-government that has led us to take such an interest in the experiments of school government by pupils themselves. For, to quote Professor Wilson again, "It is easy to be wise out of books, but it is infinitely difficult to be wise in the midst of affairs."

So, as we learn anew this month the les-

sons taught by the lives of Washington, and Lincoln, and others, let us try to make the lessons real. Let us try to see the rights and the responsibilities of citizenship in a free land. Let us try to see what the patriots of the past would stand for in the midst of affairs to-day, and what we should stand for as the stewards of our heritage.

* * *

Where in the World are We?

1900—Good morning. Everybody! Here is my best bow, and let me introduce myself as the first year in the New Century.

1899—Hold on, my young friend. You are very bright and fresh, but you will have to correct your bearings. If you want to bring in the twentieth century you must go back for one more year. But now that you have come you may as well stay and help wind up the affairs of the greatest century the world ever saw. I would consider it an honor to stay, myself, but they think I am too old.

1900—You are wrong. I have not come ahead of my time, and I can prove it.

1899—Well, youngster, what is your proof?

1900—Miss Hazzard, president of Wellesley college, and Emperor William of Germany both say this is the time for me to appear. They ought to know.

1899—Perhaps they *ought* to know, but it seems they don't. Now you listen. If you are as bright as you look you will soon see your mistake.

1900—Suppose John Smith, Esq., had been born at noon on the fourth day of July, in the year one, how would you write the day of his birth?

1899—We would write it "July 4, 1." But that would not mean that the Christian era was one year, seven months and four days old when John Smith arrived As a matter of fact, all the era could then have claimed for itself would be six months, (January 1 to June 30 inclusive) three days, (first to third inclusive) and twelve hours on the fourth day.

1900—Then "July 4, 1," really means the fourth day of the seventh month of the first year, and July 4, 1900, means the fourth day of the seventh month of the 1900th year?

1899—Exactly; and when did the year one close?

1900—Not until midnight of December 31, year 1, A. D.

1899—Right again. Now if the era was one year old Dec. 31, 1, A. D., how old would it be Dec. 31, 10 A. D.?

1900—Ten years, I suppose. And I see what you are driving at. Dec. 31, 100 A. D. it was 100 years old, and Dec. 31, 1900, it will be nineteen centuries old. That makes the new century commence with 1901 just as the very first century began with the year one. I'm just getting my eyes open. Good bye '99! I'll stay. If you happen to see Miss Hazzard or Kaiser Wilhelm you better tell them not to count their chickens before they're hatched.

There is no bad art, for effort is not art until it is good and true; but good art may be spoiled by the effect of its environment. The purpose of art is not to flatter or amuse; it is the herald of the soul. It must, therefore, express the conditions of its age and circumstances, and this differentiates ancient and modern art. This is illustrated by the analysis of Greek sculpture of ideal forms of beauty and modern individualistic and portrait sculpture as represented by St. Gaudens' statue of Lincoln. All true art must enter into the spirit of its own times and this has been done in the past and is still being done, therefore the present time has no great religious pictures, for the age supplies no great religious fervor. Landscape is the typical national art of America at present and expresses pride of country. Modern art finds its inspiration in the renaissance, which was animated by much the same spirit. This period is the yesterday of our to-day.—*Mrs. Vernette T. Morse, editor Arts for America.*

THE CHILD AND THE SCHOOL.

VIEWS OF REPRESENTATIVE MEN.—I.



HOWARD SANDISON.
Vice President Indiana State Normal School.

EDUCATIONAL IDEAS DERIVED FROM THE NATURE OF THE CHILD.

By HOWARD SANDISON.

1. The pupil is a dual being. He consists of a real self, and of an ideal self. The real self is so constituted as to feel instinctively that it is truly this ideal self, although at present only potentially. Therefore, the child is the natural ally of the teacher in all efforts to spell out the meaning of the universe, unless his native unrest in the real,

his native longing for the ideal, has been repressed by unskillful, unsympathetic work.

2. The greater self of the child is found in nature, in art, and in the activities of society. Therefore a course of study must give him the opportunity to seek his greater self in—

a. Nature, b. Mathematics, c. Language, d. Institutions, e. Art.

3. The child is essentially in touch with each of these realms of the greater self from the beginning. Hence, all must be before him throughout the course.

4. The institutions and the art of his own time and country contain elements peculiar to the present, but they contain also, positively or negatively, elements of all the past. The present condition of both is a development from the past. Hence, the child's approach to his own institutions and his own art should be through the successive development of these so as to enable him to live them.

5. The true development of an individual or of a nation is found, not in direct efforts to increase that element which separates from others, but by laboring for that larger self which is found in other persons or in other nations. Hence the child should be led to esteem most highly those acts of the individual or nation that further the interests of others while advancing his own welfare. Only those acts of the individual should be sanctioned that reinforce the institutions and are reinforced by rational institutions. Only those acts of a nation are to be approved by its patriotic citizenship which further the moral progress of the world and are strengthened by such progress.

6. Some of the acts in nature, art, and society are accessible to the pupil directly. To him may be present a plant, a statue, a transaction in society. Other arts appear in books. The aim of education is to equip the child with the desire and the ability to wrest from the plant, work of art, printed page the aspects of his permanent self. He is to be given the power to cope with any one of these when alone with it. Hence, education must gradually emphasize, more and more, processes and not facts. Education is not merely to confer on the child knowledge of plants, art, books. It must endow him with power to study a new plant, work of art, book, chapter, sermon, lecture or editorial.

TALKS ON THE STUDY OF LITERATURE.—V.

By EDWIN A. GREENLAW, A. M.

IN the first two scenes of *Macbeth* Shakespeare has shown us that beings of supernatural power are interested in some man who is yet to appear; that this man is a soldier of surpassing valor; and that Duncan, the king, is effeminate and unwarlike. The third scene introduces Macbeth to us in person, but since, as we know, the weird sisters are to exert some mysterious influence over his life, we must first have proof that they are able to do what they claim. The purpose of the dramatist at this point, therefore, is to furnish evidence of their power. Three proofs are given, arranged in order of their importance: one of the sisters has been killing swine; a second is seeking revenge upon a sailor's wife; while a third brings the thumb of a pilot who was shipwrecked upon his way home. The student should be required to interpret the meaning back of these statements made by the witches, and also to observe the medium by which they express themselves. Rhyme is introduced in place of the blank verse of the first two scenes, while the short trochaic verses give the weird effect suggestive of the horrid dance of the witches. Finally, the choice of words is important as indicating the author's conception of the characters he describes.

After this introduction the real purpose of the scene becomes evident. The battle has been fought and won, and Macbeth and Banquo, on their way to the king, are met by the three wierd sisters. We learn the effect upon Macbeth of their prophecy through Banquo's words, "Good sir, why do you start, and seem to fear?" But one interpretation is possible; the thought of being king is not new to Macbeth. In the

rest of the scene, Banquo and Macbeth are skillfully contrasted; the one innocent, unsuspicious, half inclined to chaff the strange looking creatures, and frankly puzzled at their mysterious disappearance; the other earnest, conscious of guilt, hungry to know more, and bitterly disappointed at the meagreness of their announcement. A little later, when the first part of the prophecy has come true by reason of the announcement to Macbeth of his elevation to the thaneship of Cawdor, he can think of nothing save that "the greatest is behind." The scene closes with the consciousness on our part that Macbeth, while pretending to leave the whole matter to fate, is only awaiting a favorable opportunity in order to seize the throne.

The most difficult problem in this, the longest scene in act I, is the relation of the witches to Macbeth. Some critics would have it that, up to the time of the meeting upon the heath, Macbeth is innocent of all thought of evil, and that the weird sisters suggest to him the crime which he is afterward led to commit. This, however, is clearly not the true view, for in that case Macbeth would be represented merely as the puppet of fate, a view which is inconsistent with all of Shakespeare's work. Had it not been for the peculiar affinity of Macbeth's soul for the elements represented by the power of the witches, their words would have had no more effect upon him than upon Banquo. Professor Corson well says: "The weird sisters represent the night side of nature—the powers of evil which are ever attracted to the soul whose elective affinities favor such attraction. The devil visits those only who invite him in".

The pupil's study of this third scene should make clear to him the purpose of the dramatist in writing it and the means employed to accomplish that purpose. If the teacher relies upon asking the questions suggested by the notes, or contents himself with calling for quotations and paraphrases, he has no means of knowing whether the student has grasped that which is truly essential. In order to assist the pupil in his preparation and to form a basis for the discussions in the class-room, topics such as the following may be assigned at the time of announcing the lesson.

ACT I. SCENE 3.

1. Read the scene through slowly and thoughtfully. What is the general subject?

2. Mark the words and phrases which throw light upon the character of the weird sisters. Do you doubt the witches' power? Why not? Can you think of a reason why Shakespeare gives space to such incidents as are here narrated?

3. Note the use of rhyme in this passage and try to account for it. Note, also, the mysterious way in which the witches speak. What is the precise meaning of "weird?"

4. Study carefully the effect of the witches' greeting upon Macbeth and Banquo. What differences do you detect? Can you think of any reason why Macbeth should "start and seem to fear?" Find evidence throughout the passage that Banquo does not take the prophecy seriously. What significance, then, do you attach to the fact that Macbeth is ready and eager to believe whatever the witches say?

5. Study Macbeth's soliloquy, spoken after the announcement has been made to him of his appointment to the thaneship of Cawdor. Observe his agitation and doubt. What characteristics are revealed?

6. Write an estimate of Macbeth's character, based upon the first three scenes, and support your statements by quotations.

* * * * * * *

The fourth scene is short, but very significant, for in it Macbeth and Duncan meet face to face. Just as we contrasted Macbeth and Banquo in the third scene, we must now contrast the general and the king. Duncan cannot read character, as he himself bears witness; he is weakly sentimental, and he makes a fatal mistake in diplomacy when he chooses the present, of all times, in which to name his successor. The effect of the whole is to make clear to Macbeth his opportunity, and to make strong his determination to be the next king. We cannot help feeling that the true leader, the man who stands forth most prominently in this scene, is not Duncan, the king, but Macbeth, the man who should be king.

The teacher may properly devote some time to a discussion of the differences between the drama and the work of fiction. Besides the distinctions which are at once apparent, the thought should be developed that in the drama we are left to judge the character of a man by the words he is made to say, while in the novel the author is at

liberty to assist us by his own observations. Again, in the inferior drama, as in the inferior novel, incident plays the most important part; that is, the author seeks to gain attention by the novelty of the situations and the sensational character of the events narrated. In such a work as *Macbeth*, however, the student must look back of the incidents to the words of the speakers, and back of the words to the thought suggested by them and the traits of character which they reveal. The mental attitude of the student, then, should be that of one who reads not merely to get the story, but to understand the significance of each act and word. The student of *Macbeth* has the best of opportunities for the study of human nature. Suggestive topics upon this scene may read somewhat as follows:

ACT I. SCENE 4.

1. Duncan reveals much of his character, and confirms the impression given in the second scene, in his speeches in this scene. What do you see? Underline every significant word and phrase.

2. Notice that Macbeth and Duncan are here brought together for the first time. Compare closely the words spoken by each, and determine which man is stronger, more masterful, more kinglike. Can you think of any reason for calling this scene a crisis in the drama?

3. Write a character-sketch of Duncan, calling attention to his good points and to his defects. What is your feeling toward him?

4. What do you consider to be Shakespeare's purpose in this scene?

* * * * * * *

Act I is now rapidly approaching a climax. Urged on by his ambition, by the prophecy of the weird sisters, and by the way in which Fate is playing into his hands by Duncan's intention to go to Inverness, Macbeth starts for his home, ostensibly to prepare for the king's reception, but in reality to advise with his wife. That she may be ready to counsel with him, he sends first a letter in which he relates his wonderful experiences, confident that she will see what to do. In her ambition for him, Lady Macbeth comes to the conclusion that Duncan must be made way with, even before she knows that the king is to be her guest. She is not criminal by nature; she simply does not know the cost of crime. When her husband arrives she proposes verbally what must have been in his mind from the first. It is worth noting that he speaks but little, apparently standing in need of her encouragement.

In the following scene, Duncan arrives at Macbeth's castle. The contrast between the passion and fearful plotting of the two preceding scenes, and the repose and quiet here described, is striking. Duncan suspects nothing:

> "This castle hath a pleasant seat; the air
> Nimbly and sweetly recommends itself
> Unto our gentle senses."

And Banquo:

> "This guest of summer,
> The temple-haunting martlet, does approve
> By his loved mansionry that the heaven's breath
> Smells wooingly here."

Macbeth dares not appear. He is not old in crime; he fears that he will reveal "the mind's construction in the face." And so the king, gentle and trusting even if weak and incapable, looks for the last time upon the light of heaven.

Only one point remains to screw Macbeth's courage to the sticking place. Everything has combined to urge him on, yet he hesitates. Whether this hesitation is due to nobility of character or not is made plain in the seventh scene. The first twelve lines are deeply significant. Macbeth fears to do the deed, not because of the revolting crime, ten times more revolting because the helpless king is his guest, nor yet because he fears eternal punishment, but because he is afraid of retribution in this present life. If the assassination were all, he says, and could include in itself all the consequences, so that the crime might be the only inconvenience, he would risk the life to come; but he fears that some one will commend the poisoned chalice to his own lips.

The student should next observe the means employed by Lady Macbeth to overcome her husband's scruples. She does not think of the consequences; she little knows the terrible sufferings which must come to those who commit so great a crime. Keenly reading Macbeth's mind and knowing the reason for his hesitation, she changes hesitation into resolute purpose by showing that the responsibility for the crime may easily be laid upon Duncan's servants.

STUDIES UPON SCENE 5.

1. Note carefully Lady Macbeth's estimate of her husband's character. It is an

important aid to the understanding of the following scenes.

2. Explain Lady Macbeth's words (l. 29), "Thou'rt mad to say it."

3. Note how few words Macbeth uses in the scene. In view of the determination he reached in the fourth scene, is not this surprising? How do you account for it?

4. Commit to memory Lady Macbeth's characterization of her husband.

SCENE 6.

1. In this scene, are your impressions of Duncan's character in any way confirmed?

2. Note that Macbeth does not appear in person to welcome his king. Account for this breach of courtesy.

3. Do you notice any contrasts between this and the two preceding scenes?

SCENE 7.

1. Write in your own language lines 1–12. Be sure to express fully the different shades of meaning. Explain in writing the metaphor at the end of Macbeth's long speech introducing the scene.

2. Why does Macbeth hesitate? Does this hesitation show nobility of character? Do you agree now with Lady Macbeth's characterization of her husband as given in the fifth scene? Give reasons for your statements.

3. Observe the means employed by Lady Macbeth to induce her husband to commit the murder.

4. Commit to memory Macbeth's words (ll. 46–47):

"I dare do all that may become a man;
Who dares do more is none."

But is he altogether sincere in this? If not, does he say it through hypocrisy, or for some other reason?

5. Observe what finally causes Macbeth to decide to do the deed.

REVIEW OF ACT I.

1. What is the reason for dividing a drama into "acts"? What determines the point at which one act should end and the next begin? Why does Act I end at this point in the story?

2. In a paragraph, tell the story of Act I. Make your narration as vivid and interesting as you can, and do not fail to emphasize the important points.

3. The first act contains only 475 lines. Compare with the same amount of any story or novel you have read. In which case are the most results accomplished? Why? How does Shakespeare condense so much into so little space? Should *Macbeth* be read as rapidly as you read *Silas Marner* or the *Sketch Book?*

4. You now have certain ideas as to the character of Macbeth, Banquo, Duncan and Lady Macbeth. How did you get these ideas? Can you apply similar methods of judging character to daily life? Are such methods of any use to the business man? To the lawyer and the minister?

5. Note that in ways and at times when we are least aware of it we are giving to others the materials by which they judge us. It is impossible long to deceive others as to what we are; all our acts and words bear testimony against us or in our favor.

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As was suggested in the preceding article, additional studies may be assigned as supplementary matter. Studies of words are important, and may include the naming of poetic words, with reasons for such classification; the study of obsolete and archaic forms; and the study of word derivation. Under the last topic such words as weird, metaphysical, remorse, compunctions, fell, courage, scruple, and many others, will be found to have interesting derivations. The study of rhetorical figures, with their emotional values, should not be neglected; and for spelling and composition work there is abundance of material.

The central thought throughout this series of articles is best expressed by the words, "Understanding by means of investigation." Students of literature should observe and investigate as truly as students of science, and the results are quite as valuable. It has not been many years since the natural sciences were studied solely by text-book work, by reading about elements, rather than by dealing with them at first hand. Similarly, literature was studied, where studied at all, by learning and repeating critical opinions concerning masterpieces which the pupil had never seen. There is vast difference between allowing a pupil to content himself with writing a paraphrase of *Macbeth* and reading several criticisms by recognized authorities, and the method which compels him to work out for himself his own interpretation. His expression may be crude at times, but at least it is his own, and it has meaning for him.

The last of the studies in the review of Act I makes clear the relation of this work to the pupil's life. It is of more value for the boy to be shown that by his every act he reveals his true character, and that he must look closely enough to interpret the meaning which lies under the surface, than to be forced to memorize long lists of learned notes, the majority of which he must forget as soon as possible after the term examination. Power of insight, of interpretation, of self-analysis cannot but be of the highest value to the student and to the man in the midst of active life. These aims must be set up as the highest in the teaching of literature, and commentaries and notes are to be considered as helps toward interpretation, not as ends in themselves. Questions as to definitions, allusions, parallel readings, etc., must be asked, but they are asked not to form a basis for setting down a mark for or against a pupil, but as means toward larger ends. It is only a difference in the point of view, but that difference is very great. The teacher must see to it that in all the work of the school sharp distinction is drawn between that which is of paramount importance and that which is of little consequence. It is the function of the school, not to give knowledge, but to give power.

NORTHWESTERN UNIVERSITY.

SOME THOUGHTS ON THE ESTABLISHMENT AND CONTROL OF A PUBLIC LIBRARY.

By W. E. HENRY.

THE individual or the institution which gives life must become both cause and effect. Every valuable institution that has the betterment of the community as its fundamental aim must both create and satisfy its own demand.

If our missionaries were to stay at home until the wilds of the Orient or the Occident were crying for a deeper religious life, the gravestones of our mission bands would stand nearer the parental homestead. If a school had to wait for its establishment until the entire community should find itself ready and thirsting for the fountain of knowledge and praying that their waters might burst forth from the rocks, then must our education languish and the great forerunners of our systems and institutions would have died with all their glory unrevealed. The progress of our life has not been by unanimous consent nor even by a majority vote.

Guizot it was who said that the discovery of every new truth finds coupled with it the desire to give that truth to the world. When Paul saw the new light his first act was to proclaim the new truth in the synagogue. Every one believes in Paul's conversion for it is a part of the habit of every human soul.

Every college in Indiana has to-day more students than its faculty and equipment can adequately provide for; but if we could know the struggles and discouragements that were the experiences of the few zealous souls who planted these institutions, we could see the pictures of truth, implying growth. The benefactor of the human race must be a missionary in spirit. Don't misunderstand me. I do not mean he must work wholly without compensation and live upon the kind of food given to the prodigal son while he was working with the committee on foreign relations. But I mean he must be willing to take part pay in soul growth. The person who simply earns his salary under the letter of the law is an unprofitable servant and sooner or later must be cast into outer darkness. The one who urges the establishment of a library or a movement for its improvement is a missionary, and the person who works in a public library without the spirit which accepts part pay in human life, should be relieved of such responsibility.

UNSELFISH GOOD IS CONTAGIOUS.

As the presence of one helpful man in the community creates the demand and finally the necessity for others of like kind, and as the creation of a great university gives a new impetus and a new standard to every

educational institution within a radius of two hundred miles, so does the presence of a library enthusiast in a locality multiply himself or herself many fold, and as in all other nature the offspring much resembles the parent. The establishment of a good public library in one of the progressive towns of Indiana becomes the impelling force in the same lines in many other towns. It is not difficult to see how inoculation takes place nor how the microbes scatter and infest the whole social body when inoculation once occurs. The malady is incurable after it once gets started; even a health board is totally useless, yet sometimes the school board has been known to check for a short time the growing tendencies; but in very recent years even the school board is almost powerless to so much as produce even a temporary interference.

The spread of library growth is sometimes contracted by one city superintendent from another at their various valuable and other meetings. Yet many of our superintendents still show strong evidence of early vaccination, which remains so effective that the process will not have to be repeated for many times seven years. Sometimes where it is epidemic in one town it is carried by club women visiting back and forth, for nothing has so far been discovered that a club woman will not take that is prevalent with her class and set. She must always be entitled to the largest privilege.

GRATIFYING GROWTH.

The large number of libraries established in Indiana within the last two or three years is phenomenal for Indiana, however well or poorly it may compare with growth in other states. Crawfordsville, Columbus, Greenfield, Shelbyville and other towns with well organized and well managed public libraries, with Newcastle, Goshen and Elkhart moving in that direction, are encouraging. It has been said that the one who agitates the movement must be actuated by the missionary spirit, yet it is infinitely more true of the one who as librarian leads the public library on to successful operation among the people. Subordinate, then, to these foundation principles, it may not be out of place at this time and on this occasion to specify distinctly some of the larger details which must be met, and some of the problems which must be solved by every community in the establishment, maintenance, and conduct of a public library in one of our towns.

FOUNDATIONS.

It is useless to talk of a public library without funds in cash to meet actual requirements of the business, and some controlling body with absolute power to act, and with equally positive responsibility to the people for their acts. The fund upon which a library can be founded and maintained must have at least three characteristics: (1) it must be adequate to give permanent and respectable business aspect; (2) it must be sure as death and from as reliable a source, but unlike death it must be (3) calculable in advance. These things all point to the fact that a public library can not be run on popular charity; for, while charity is good, it is both too variable in its expression and too spasmodic in its efforts to make the basis of business or public interest, and in such cases too uncertain to secure to itself popular respect. The fund should be, although not necessarily so, an ever-increasing one.

In Indiana there are but two methods by which such financial backing can be secured, and these are either by endowment or the levy of a specific tax upon all the taxable property of the library unit; that is, the town, township, or county. The former is fine when it works, but it so seldom works in our state that it is usually idle to speak of it. A library can be started in almost any town by a general subscription, which is a good thing to do, but it cannot be permanently supported on this basis. So, then, in my judgment, when a library is to be established and supported outside of the possibility of finding some one who will establish a library fund, and the general possibility and almost certainty of a good general subscription to start with, there is but one thing to do with regard to funds, and that is to secure the levy of a tax upon the property.

Adding a small tax is a fine political bugaboo and furnishes street corner chat, but scarcely any person in any town will object when he sees what it will actually cost him, for he does not care what it costs others, and the best method of silencing the objector is to multiply his assessment by the rate of the library levy, and when he finds that he can supply his family with reading matter for fifteen cents a year, where he has usually spent several dollars, he will

imitate the man rather than the mule, and kick forward rather than backward. Thus, a good body of evangelists to start with, can convert the whole town in the time usually given to a winter revival with less exposure to ill-ventilation and night air.

LIBRARIES AND SCHOOL BOARDS.

In Indiana it becomes the business of the school board in incorporated towns to levy this tax and to have financial management of the library and be responsible financial agents between the people and the common property. Whether we like this or not, and whether it is best or not, it is our law now, and likely to remain so. It has been charged that the library must be a secondary interest with the board and will be made subordinate to rather than coordinate with the school. It has been further charged that politics will thus enter into the management, that special fitness on the part of the librarian will be disregarded in the selection. All these things may be true but not necessarily so. When the library spirit prevails these things will not usually happen. When a few people really appreciate the significance of a public library, bad management is the exception rather than the rule. It has also been held that when school trustees have control of the public library they are likely to locate the library in the school building and thereby exclude the public, or rather leave the public to exclude itself by inference, the inference being that when the library is in the school building it is for the use of the school. If the people are thus led to this inference and the consequent conduct, then the practice cannot be too strongly condemned. The matter is simply a question of fact. I fear there is danger, yet the experience of those who have tried it will be the better test. At present, however, my advice would be against placing a public library in a school building if it can be avoided at reasonable expense. I am sure that unless people have changed within a dozen years they do dislike to go into a school building as feeling that it is under special control and not for the elders.

The objection that school trustees will make the library a secondary interest has been answered by some boards transferring the direct management of the library to a board composed of those citizens who are at once much interested in library work, and who by nature and education are fitted for such special work. This seems to me a happy solution, but in case the board of trustees hesitates or objects to doing this it is a delicate matter for any citizen to urge.

Whether we think the school board best fitted for the place provided by law for it with regard to the public library, the law at present is so and a change would be strongly opposed by many trustees and school men, and a change would be difficult if not quite impossible. The immediate hope if things are not as they should be is to create and cultivate such a demand for a public library and such an imperative demand for its proper management that no board of public servants by any name will dare to offer indifference or disobedience to the popular feeling.

WHAT MAKES A LIBRARY?

The trustees and the people must be led to see from the first that a collection of books is not a library, but only one of the conditions under which a library becomes a possibility. Books classified, catalogued, shelved and known, make a library. None of these can be omitted in the constitution of a public library worthy of that name. Unless the trustees feel these things and are strongly supported in the feeling by popular intelligence, mismanagement is the most logical result. I count by all odds the most important event in the life history of a library is the selection of the librarian. I would place this in all respects of greater importance than any, in fact I might say than all other things after the funds are provided. Funds and a librarian will make a library.

WHO SHALL BE LIBRARIAN?

A library has been determined upon, funds have been provided, whom should the trustees select for a librarian? Whom should the people urge for this position? Should the trustees select one of their nieces or the sister of one of them? Maybe so. Should the Baptist church urge one of its young women who is out of a job and who is such a good church worker? Possibly so. Should I as a leader of the dominant political party insist that the place be given to the daughter of the chairman of the central committee? I might. How would it do to give the place to some dear soul who was such a good teacher, but who is either too

old to do school work or whose health has failed? Here is a poor girl who really ought to have a place. She has not scholarship enough to teach in the schools; shall we not insist on our board electing her to conduct the library. That would be charity. On another ground, still, shall we not insist that the board must elect some one from the immediate locality, for you know it is an open insult to our own people if our board go away from home to select a librarian when we have dozens of good women who might have the place.

Any one of these points may be urged with some appearance of justice, but to select a librarian for any or all of these reasons is to make a failure of the library. There is but one ground upon which any community should urge the selection of a librarian, and upon this one alone should the board yield, and that is that the person selected is the best librarian or the nearest good librarian that can be secured after much inquiry and investigation for the money to be expended in that direction; and the librarian should have a salary equal at least to that of the best teacher in the public schools.

A HIGH STANDARD.

What the librarian must be both by nature and culture I could not now take time to enumerate, even if I knew. In brief, she must be the sum total in culture of the entire community, and by nature but little lower than the angels. She must be by nature patient, just, generous, gentle, mild, positive, firm, rapid but not hasty in judgment, and so finely tempered that she may yield but never break. In culture the librarian must be scholarly in both habit and accomplishment, in fact it is not too much to say that she must be a college graduate or its equivalent and of the modern type of studentship. It is quite impossible for one to obtain the scholarship daily needed in the work of librarian and especially along the lines of history and literature, for the largest acquirements fall short every hour in library work. As before said, she must combine the culture of the community, for in addition to her own affairs she is expected to be ready upon call to add somewhat at least to the present possessions of every one. So should she be expected to do, and the trustees and the people ought to see that these demands must and should be made upon the librarian. She should be selected with this in mind, and she should be paid for these requirements. This librarian selected for the library about to be organized should be one of not only scholastic attainments in general, but she should by all means be a trained librarian, either from a library training school or by experience in a well-managed library. This standard is not too high. The times and the demands have furnished such people and they should be employed and only they.

If our local talent can't furnish these requirements they have no right even to be candidates from the place. The untrained boy does not expect to become cashier in a banking house simply because it is established in his town. Railroads do not transfer a section hand into a superintendency simply because he is on the ground when a new superintendent is wanted. It isn't business, nor is it just. A candidate for a teacher's certificate when asked what preparations she had made for teaching replied that she had bought a cloth dress and her winter shoes. Candidates for librarianships are sometimes equally well prepared, sometimes hardly so well. If there be local talent as prospective it is certainly not too much to demand some degree of special preparation before appointment, or that the appointments be made upon that condition.

SCHOLARSHIP AND GUMPTION.

Training alone will not create a librarian. Scholarship and gumption are necessary conditions. Without these, training makes a machine and the library world will be worried both night and day for all eternity whether it should be two dots or one, two cards or one, open or closed shelves whether it should end in *og* or *ogue*, whether it is red ink or black, whether the indentation should be two ems or three ems and all sorts of such weighty questions. With scholarship and gumption all matters of device can be seen merely as means, the end being the most immediate usefulness of the library. The fact that a person is fond of books and reading may be an item of evidence in favor of a certain appointment; it may be the opposite.

It is not within my province to say what system of classification or what method of cataloguing is best. Any recognized system and method are good enough if well understood and well followed. I do believe, however, in organizing a new library that it is

best to accept and follow a system that is prevalent in the majority of similar libraries, simply for the sake of uniformity. It would be idle for me, or for any one to say what device librarians should institute in order to popularize and create interest in a library. The gumption of each librarian must stand her in hand at this point. The nature of the librarian, the local condition, the peculiar nature of the people, must determine what can be done by way of bulletins, exhibits and newspaper notices, etc. Interchange of views among librarians such as these meetings, will help infinitely if well used. A librarian visiting another library will gain and give much good. The fact, however, that you succeed in one particular plan in work, is evidence, but by no means proof that I can or that any one else can.

I have written these thoughts upon the establishment and conduct of a public library because these are brought to me constantly from all over the state where libraries are being talked of and planned for. The interest is now great and rapidly growing.

Two things are necessary for a successful public library, a permanent fund and a librarian. Seek these two things and all else shall be added.

STATE LIBRARY, INDIANAPOLIS.

COUNTRY SCHOOL WORK IN COOK COUNTY, ILLINOIS.

By CHARLES W. FARR.

THAT part of Cook county lying outside the city of Chicago and over which the county superintendent of schools has jurisdiction comprises about eight hundred square miles of territory. The children of this part of the county are instructed by seven hundred public school teachers together with one hundred fifty teachers in private schools. Of the seven hundred public school teachers one hundred thirty are in purely agricultural districts. The teachers of the graded schools are surrounded quite generally by those helps and influences which make it entirely possible to do effective work. This condition however, does not hold in the country schools to the extent that it should. A special effort has been made by the office of the county superintendent of schools for the past few years to bring about a more favorable condition in the rural districts and thereby extend to the boys and girls who live on the farms of Cook county greater opportunities and encouragement for acquiring an education. In a general way the work done may be indicated under the following heads:

a. Country section at annual institute.
b. Afternoon session of monthly meetngs.
c. Country district meetings.
d. School visitation.
e. Visiting directors.
f. Supplying books and paper.
g. Suggestions in biennial report.
h. Official bulletins.
i. Stereopticon entertainments.

The country teachers meet in one section at the annual institute and the work done is especially adapted to the needs and problems of the country schools. At the last institute four daily sessions of the country section were held and the work consisted of "Songs and how to Sing Them," "Elementary Science," "History and Literature," and "Arithmetic." Besides this special work the country teachers attended the two general sessions of the institute. During the school year meetings are held each month, the afternoon sessions of which are given up to the country teachers. The first forty-five minutes is devoted to the study of songs and how to sing them. Following this is a round table discussion led by the county superintendent based largely on observation in school visitation. At the present time much attention is being given in these meetings to the matter of the improvement of school premises, schoolhouses and schoolroom decorations.

Once a year country district meetings are held by the assistant superintendents. Eight or ten teachers are called to a country school. The teacher where the meeting is held has her regular program in the forenoon. In the afternoon there is a general discussion based on the work of the morning, the motive in

the discussions being, hunting for good things to take into my own school. Each teacher takes notes on all observations and conclusions, that she may have something definite to stand for the day's work.

Each country school is visited annually by the superintendent and as frequently as practicable by his assistants. A record of each visit is made, setting forth the general condition of the school and the suggestions made to the teacher. These records are filed in the office for future reference. The matter of school visitation is made of the greatest importance. It is here that the teacher has a reasonable right to expect her most decided help and greatest inspiration. The time spent in a single visit varies, of course, according to the needs of the school. Thirty minutes is often sufficient. Conditions, however, making a conference with the teacher necessary sometimes demand a two-hours visit.

The directors of each rural school were visited once last year. The object of such visiting was to confer with them on school matters in general, and especially to make the transaction of business connected with the schools conform to the law. A great improvement has resulted in the manner of transacting business and keeping school records.

The office has been able to loan circulating libraries and supplementary reading books to such an extent that very few if any districts have not had the advantage of the same to some extent. The motive in doing this was to develop a love for reading and arouse a sentiment in favor of libraries. The outcome of the movement is encouraging beyond expectation. Probably seventy-five per cent. of the schools are doing something toward acquiring libraries.

In many districts the directors are buying the books, paying for them with public money raised for the support of the schools. While this is only one of the many ways of procuring additional reading matter it is the ideal one. The library books are read in the farm homes and are doing much to compensate for the limited social relations surrounding country life.

A good quality of Manilla paper cut into three sizes is furnished by the office to the country schools. This is used for seat work in folding and cutting. The object in so doing is to lead school authorities to see the value of such material and furnish the same. Each school officer and teacher in the county is supplied with a copy of the biennial report. This report sets forth fully the duties of school officers as to their manner of transacting business, keeping records, and the proper administration of school affairs. All official bulletins issued during the two years are also published in the report.

The latest effort made by the superintendent's office having as its object the improvement of the country schools is that of giving stereopticon entertainments. While the teachers have done everything possible to carry out the suggestions of the superintendent it has seemed advisable to meet for conference in a more direct way the directors and patrons. It is not an easy matter to get an audience with farmers, who are busy people, during the day time. Their willingness, however, to congregate at the schoolhouse or hall in the evening for the purpose of entertainment and conference, has been very encouraging. So far these entertainments have been given by townships and the movement has progressed sufficiently to warrant the conclusion that they are a valuable means of arousing greater interest in the country schools.

They consist of music and of a talk illustrated by about one hundred views. The music is furnished by the children of the township, assisted by a male quartette of country teachers. The general outline of the work done is as follows:

Illinois, Cook County.
This Township.
School District.
The Farm—soil, plants, animals.
School Premises.
Outside of School House.
Inside of School House.
School Apparatus.
School Decoration.
Results.

This outline is thrown on the screen and discussed sufficiently to make plain the plan of the work. With a good lantern and calcium light a perfect reproduction of pictures, printed pages, maps, outlines and portraits, eight to twelve feet square can be made on the screen. The location of the state capital and Cook county is made prominent on a map of Illinois. With the map before the audience the quartette sings "Illinois" and the portraits of Lincoln, Grant and Logan are shown. A map of Cook county shows the location and names of all the townships,

also the location of schools, country and graded. The map of the township in which the entertainment is held shows the school district boundaries and the location of the schoolhouses of the township. The school district is divided into farms and the following outline is put on the screen to indicate a line of work based on farm life.

THE FARM.

Children are interested in the farm.
Know its hills, streams, plants, animals.
Talk about the farm and draw it.
Four things are necessary in raising crops —soil, moisture, heat, work.
The farmer can not to any great extent control heat or moisture but he can work on soil.

This chart is followed by a number of pictures of farm houses and barns.

THE SOIL.

Pebbles, sand, soil.
Composition—rocks, animal and vegetable matter.
Kinds—sandy, clayey, peaty.
Fertilization—Land must be paid back.
Cultivation—to kill weeds, hold moisture, allow roots to grow.

As far as possible the work suggested on the soil is illustrated by pictures. The soil properly cultivated produces plants and the following plant chart is discussed.

PLANTS.

Talk about farm products.
Study plants found on the farm.
Corn—stalk, blade, roots, ear.
Trees—what do they give us?
Flowers—wild and cultivated.
Leaves—make collections.
Vegetables—cabbage, pumpkins, etc.
Make little flower gardens.
Plant trees in the schoolhouse yard.

Pictures of corn fields, trees, flowers, pumpkins, etc., follow the above outline. Easy first grade reading lessons setting forth the children's observations of plants, such as corn or pussy-willow are shown.

ANIMALS.

Talk about farm animals.
Study animals found on the farm.
Tame animals—dog, horse, cow. What do they do for us?
Chickens—profit in raising them.
Care of all farm animals.
Wild animals— their uses.
Insects—useful, injurious.
Be kind to all animals.

Pictures of dogs, horses, cattle, chickens, hogs, sheep, cats, etc., indicate how the study of farm animals may be made attractive and valuable. Eight pictures of cattle are used. The first one is a well-kept dairy barn. Five of them show different breeds of cattle, some developed for dairy purposes others for beef. One shows the three families of cattle kept at the state agricultural college. The last one is a splendid picture of a herd of holstein cows grazing in a beautiful valley. Primary reading lessons made by the children and based on animal life are put on the screen. These lessons show plainly the valuable results of well-directed observation. Leaving the farm, a picture of an ideal school premises is shown. The arrangement of the buildings, their proper care, and the matter of trees in the schoolhouse yard are considered. An appeal is made for the improvement of the one piece of property in which all the people of the district have a common interest. Pictures of ideal schoolhouses together with floor plans set forth the advantages of efficient economical buildings and thoughtful arrangement. A number of pictures of the interiors of country schoolhouses indicate what it is possible for an energetic teacher to accomplish, even under unfavorable surroundings, to make her schoolroom neat and attractive, by the use of inexpensive artistic pictures, rather than advertising cards. Directors are strongly urged against the purchasing of arithmetical and reading charts. A printing outfit costing less than two dollars with which the teacher makes her own charts is recommended, and a picture of the same is shown. Pictures of great Americans, naval heroes, and American poets are used to show the value of books telling of their life work. The hope is that the influence of these entertainments may help to unite in a more decided way the interests of the farm, the home and the school. There is no doubt about their entertaining. This, however, is not sufficient, and the movement can not be regarded as entirely successful until evidence is seen of its securing to the boys and girls who live on the farms those advantages they have a right to enjoy.

CHICAGO.

"We have but one life here on earth," said Longfellow. "We must make that beautiful. And to do that, health and elasticity are needful; and whatever endangers and impedes these must be avoided."

LONGFELLOW AS A WORKER.

By JANE A. STEWART.

HENRY W. LONGFELLOW was known in college as a prodigious student. Impelled by his love of knowledge, he said, "I wish I could read and write at the same time. I have a most voracious appetite for knowledge. To its acquisition I will sacrifice everything."

The impetuous leadings of his youth towards literary work under the ardent enthusiasm of the eager student, were happily tempered and regulated by his mature judgment and mental equipoise. Throughout his whole career he displayed a normal and healthful activity of life. As a result Longfellow presents to us an illustrious example of the wise economy of time. From his beautiful life many lessons of wisdom can be drawn.

Longfellow laid the foundation stone of his life-work by having a high aim. "I will be eminent in something." His motive was pure and ennobling. It is illustrated in his letter to a friend, "Look into your own heart and you will find the motive there. It is the love of what is intellectual and beautiful; the love of literature; the love of high converse with the minds of the great and good; and then speaking the truth in what you write and thereby exercising a good influence on those about you, bringing them as far as you may to feel a sympathy with all that 'is lovely and of good report.' Think of this and your heart will be lighter. For my part I feel at this moment more than ever that fame must be looked upon only as an accessory."

A letter to his life-long friend, Charles Sumner, indicates the high conception of the dignity of labor which Longfellow cherished: "You are hard at work, and God bless you in it. In every country the dangerous classes are those who do no work; for instance, the nobility in Europe and the slaveholders here. It is evident that the world needs a new nobility,—not of the gold medal and sangre azel order; not of the blood that is blue because it stagnates; but of the red, arterial blood that circulates, and has heart in it, and life, and labor."

Longfellow was possessed by that "malaria of the mind,"—

> "The fever to accomplish some great work
> That will not let us sleep. I must go on until I die."

Returning from his third trip abroad at the age of 35, he wrote,—

> "Half of my life is gone, and I have let
> The years slip from me and have not fulfilled
> The aspiration of my youth, to build
> Some tower of song with lofty parapet.
> Not indolence, nor pleasure, nor the fret
> Of restless passions that would not be stilled,
> But sorrow, and a care that almost killed,
> Kept me from what I may accomplish yet."

Steadfastness of purpose was a strong characteristic of Longfellow's work. Throughout all the vicissitudes of his professional life, he seems never to have missed the road which his intellectual and emotional endowments pointed out. He wrote, "I labor and work right on with what heart and courage I may. I do a great deal in college, and devote my leisure hours to literature, and 'by the vision splendid am on my way attended.'"

His high ambition was based on the knowledge of his latent powers. It caused him to fret sometimes against the confinement of the "daily grind." "I could live very happily here if I could chain myself down to college duties and be nothing but a professor. I should then have work enough and recreation enough. But I am too restless for this. What shall I be at fifty? A fat mill horse, grinding around with blinkers on. But, now, with my Meleager's firebrand, shall I reach fifty?"

Longfellow seldom spoke of the heat of composition or toil of study. "With me all deep impressions are silent ones," he said. His labors were whetted by his delight in work, voiced in "Michael Angelo,"—

> "Work is my recreation,
> The play of faculty; a delight like that
> Which a bird feels in flying, or a fish
> In darting through the water."

It is of interest to consider the working methods of such a great contributor to the world's best thought, and wise director of the mental growth of others as Longfellow was. System was at the basis of his manifold labors as teacher and author. He was very methodical in his division of time. His papers and books were carefully arranged, ready at hand.

The amount of work which Longfellow accomplished was almost phenomenal. It has been well said that the translation of Dante's *Divina Commedia* was an undertak-

ing of such inherent difficulty as well as magnitude that a man might be pardoned if he should regard it as sufficient for his share in the work of the world.

The secret of our poet's wealth of production is found not alone in his rare gift of poesy, but in his genius for work, and in his high conception of the value of time. Referring to his translation of Dante, he said, "I write a few lines every day before breakfast. It is the first thing I do,—the morning prayer, the key-note of the day. . . . I really have but a few moments to devote to it daily; *yet daily a stone, small or great, is laid upon the pile.*"

Each new day was a treasure to him;—"A lovely day. I feel like a boy with a new guinea. I want to spend it and to keep it both. Keep it I cannot. In what way shall I spend it?" Again he noted,—"The great red sun looked through the window curtain and seemed to say, 'Come on, my little men, the day is ours'."

How busy he was and how patient with the frequent, thoughtless encroachments on his precious leisure. "Leisure is to me the sweetest thing in the world," as a college student he wrote his father. Twenty years later, the same desire for thought seclusion he voiced in his journal,—"I am in despair at the swift flight of time, and the utter impossibility I feel to lay hold upon anything permanent. All my days and hours go to perishable things. College takes half the time; and other people with their interminable letters and poems and requests and demands take the rest. I have hardly a moment to think of my own writings, and am cheated out of some of life's fairest hours. This is the extreme of folly; and if I knew a man far off in some foreign land, doing as I do here, I should say he was mad."

After his resignation from the Harvard professorship Longfellow received his visitors after 12 o'clock, reserving the morning hours for literary labors. But only through infinite patience and perseverance could his work have been accomplished in face of the countless interruptions to which he was subject.

The day of rest,—the "truce of God" between contending cares,—was welcome to him as to any battler with "the stubborn clod." "Sunday is like a stile between the fields of toil where we can kneel and pray, or sit and meditate."

Ill-health, of which fortunately he had little, could not break the shining strand o his perseverance,—"Well or ill, I must work right on, and wait no happier moments."

Longfellow always worked to a plan. "Plans,—ah, thousands float through my brain!" But of anxiety about future work, he frankly said, "Remember the proverb, 'Do not cross the bridge till you come to it.' This is one of my defects. My mind reaches forward and anticipates its work, and therefore very often it is done over twice."

He never allowed his feelings to interfere with his work. He said, "I am confident it is often sheer laziness when a poet refrains from writing because he is 'not in the mood.' Until he begins he can hardly know whether he is in the mood or not. It is reluctance to the manual labor of recording his thoughts; perhaps to the mental labor of setting them in due order."

Throughout Longfellow's life-record, we find running the minor chord of a divine dissatisfaction with the amount of his productions. "Authors and artists of every kind have one element of unhappiness in their lot; namely, the disproportion between their designs and their deeds. Even the greatest cannot execute one tenth part of what they conceive." "Last year how many poems I wrote and this year not one!" he exclaims.

Some one has said of Longfellow's laborious years as a professor, "O, the pity of it! Others could have lectured but who could write his poems? That he should drudge was an infinite pity. What might he not have accomplished fresh and untired?"

The great Planner and Director of the universe, in the meshes of whose purpose each living worker is a vital though infinitesimal strand, alone can answer this query.

Longfellow realized that "Life is a short day, but it is a working day," and has transmitted his energy to countless readers of his poems.

On each recurring anniversary of his birth (Eebruary 27), there arise clouds of grateful witnesses to the divinely cheering and consoling stimulation of his message. God has blessed his words and work. Of such as he, was it not written, "Yea, saith the Spirit, that they may rest from their labors; and their works do follow them."

BOSTON, MASS.

PRIMARY.

EDITED BY

FLORA J. COOKE, Chicago.

WATER.

The outline and experiments given below do not represent a logically developed series of lessons upon water, prepared to give the children definite knowledge of this most useful substance. It is rather a mass of illustrative material showing the results of certain experiences and spontaneous questioning of the children. It purposely shows how they were allowed to digress from the subject selected for study, because of the interest they manifested in other things which they observed, as stories, etc., and how this seeming digression was afterwards utilized many times so that it directly helped to give the children a more comprehensive idea of the properties and uses of water than (perhaps) they could have gained had their observation been circumscribed by a fixed preconceived plan of the teacher. There was, on the one hand, no hurry and no desire that the children should discover in one year all that there is to know concerning water. Nor, on the other hand, were they limited in the study of any phase of it which this interest, awakened by their experiences and environments, gave them the power to comprehend and appreciate. In short, the point I hope to make is that the selections of work was based upon what the children seemed best able to assimilate at the particular time, without regard to a logical development of the subject from the standpoint of an adult.

TRIP TO THE LAKE SHORE.

As Lake Michigan is so important a factor in our environment at Chicago we go in the fall to the lake shore.—It is a typical picture—water, sky, plant life, animal life, sand and stones.

To some of the six-year-olds, who paint what they see there, it is merely a picture, which is impresssed according to the intensity of their interests, and which in some cases, may be interpreted by the collection of things that they bring back to the schoolroom; as, shells, stones, bottles of lake water, plants and animals. One of the most direct interests of the lake to the little children seems to be, that it is from this source that all the water comes to them which they use for drinking, cooking, sprinkling, washing, bathing, and for steam power.

Without suggestion from the teacher the first grade children have asked many thoughtful questions concerning what they have seen at the lake. The following are perhaps among the most suggestive:—"Who made the big hole for the lake?" "How can it stay so full when we use so much of it?" "How does it get up into the pipes to come into our houses?" "Why does it stay in the lake and not go down or run over the city?" "Where does the sand come from?" "What is the name of this red stone?" etc. They always enjoy the smooth, round pebbles and differing colors found in the stones. Many of their questions the children have been allowed to answer for themselves through closer observation or the help of simple experiments. Indeed in but very few cases are the experiments the first cause of investigation.

In the schoolroom the children sort, classify and label the material gathered in such a trip, testing the stones for hardness, color, constituents, etc. The following explanatory experiment has been found useful in this connection:

EXPERIMENT.—Place rusty nails in water and vinegar, and a penny in strong acid and pour such solutions over white sand. In the result the children distinguish two colors found in the common stones and try to account for the various markings upon them. As they find stones containing crystals, they perform simple experiments in solution and crystallization with salt, sugar, alum, etc., and visit several places having large collections of crystals. They find that a certain number of their stones bubble and dissolve in hydrochloric acid, and after many experiments these stones are labelled "limestones." They discover that shells and bone also contain lime. They find much limestone in the immediate vicinity of the school, in the foundation of the schoolhouse, drug store, church, etc. Marble in statues, pillars, fountains, etc. They learn that the pebbles that will scratch glass are called quartz pebbles and afterwards discover by the same test, quartz in granite, crystals, etc.

READING LESSON.—Henry thought the white quartz crystals were glass.

Sand is little grains of quartz.
Men make glass of quartz sand and lime.
They put sand and lime in big clay jars.
They melt the sand and lime in the fire.
Then it looks like molasses.

They put a long tube like a horn in the soft glass.

They can blow it into shape with this.

That is how men make glass bottles and vases and lamps.

Henry was almost right, was he not?

Quartz is not glass.

But glass is melted quartz with lime in it.

In this way the children observe the differences, uses and most characteristic properties of these stones and learn something of their relative value in this locality. The stones gradually become their friends, claiming attention whereever they present themselves, and the children having seen how they act under a few conditions are never tired of testing them to find out their greater possibilities.

TRIP TO THE SWAMPS.

They go also to a swamp which is within walking distance from the school. Here is another typical picture, with different soil, water, plants and animals.

The children unconsciously study the general characteristics of a place through the use of their water-color paints. They make their collections as at the lakeshore, and as they classify and label their specimens they cannot fail to notice the striking differences in structure and materials, especially in the soil and plant life of the two localities.

The water in the swamp is black and unfit for drinking, and a series of lessons grows out of the children's efforts to make it pure enough for this purpose:—The question before the children is, *How to purify water for drinking*—

EXPERIMENT (1).—Evaporate a small quantity of each kind of water on a piece of clear glass. Children catch the escaping vapor upon a piece of cold glass. Evaporate the condensed vapor and compare the marking upon the two pieces of glass. Catch the vapor escaping from boiling maple sap, taste it. Catch the vapor escaping from boiling salt water, etc. See if the children discover what happens in the process of evaporation. (A flask "still" should be prepared in the schoolroom for distilling the water for the other experiments.) Question: Where does the water get the impurities—salt, lime, etc., which it contains?

EXPERIMENT (2).—Children make a filter, using quartz sand and wood carbon. (Both substances are well known to the children.) What effect has the filter upon water? Examine other filters. Test each for its especial value. Through these experiments the children may perhaps discover the simplest method of purifying water of materials held in suspension, and also of those held in solution.

READING LESSON.—We use water every day.

We use it for drinking, cooking, sprinkling, washing, bathing, sailing and for power.

In September we brought home some water from the lake.

We let it settle.

We found sand in the lake water.

We brought home some water from the swamp.

We let that settle, too.

We found loam in the swamp water.

We need pure water to drink.

So we tried to purify the lake and swamp waters.

We boiled them.

The water all boiled away.

The sand and loam were left.

We tried again.

We caught the vapor from the water upon cold glass.

There was no sand in it.

There was no loam in it.

The water was pure.

Later the grasp of the preceding work was tested in the following lesson which I put also in the form of a

READING LESSON.—We played we were out on the ocean.

We had no water to drink.

We were very thirsty.

Some one said, "Let us get water from the ocean."

We did this, but the water was salt.

It made us more thirsty.

Carleton said, "Let us strain the water,"

We did this, but the water was still salt.

Donna said, "Let us boil the water."

We did this, but the water was still salt.

Hans said, "Let us catch the vapor from the water upon a piece of glass."

We did this,—the water was fresh.

How do you think we got enough to drink?

There are, of course, many general lessons upon water for the purpose of discovering what the children have already observed—as to its uses, and the different forms which it takes, as liquid, solid and vapor—and the conditions governing such changes. For seat work they show in pictures their ideas of its sources and represent the springs, brooks, rivers, falls, lakes, oceans, etc., that they had seen in traveling.

In accounting for the difference in water they have large cans of swamp water, lake water, rain-water, distilled water and soap; and also water which they have filtered through sand, through garden soil, etc. They carefully exam-

ine the sediments in each case and try to account for the differences found.

EXPERIMENT (1).—Test each sediment for carbonate of *lime* with hydrochloric acid. (See stone experiment.)

EXPERIMENT (2).—Test each solution for *salt* with nitrate of silver. (The silver nitrate can easily be prepared by placing a dime in nitric acid.)

HARD AND SOFT WATER.—The children know that part of the same rain falls upon the lake and the swamp. Yet the lake water is hard and curdles when soap is used in bathing the hands in it, while the swamp water is soft and makes fine suds. With the soap solution they test all the waters mentioned above.

EXPERIMENT.—Pour any of the soft waters through a cloth containing a small portion of lime and test with soap solution.

What has made the water hard?

The fact that lime can make soft water hard called up in the minds of these children their experience at the lake shore, and that the images gained there were vivid, however crude and incomplete, was proved by their eagerness to tell that the lime in shells, bones of fish and limestones might make the lake water hard. It was of course necessary here that the teacher, while encouraging them, should not allow them to be too easily satisfied with their conclusions. She should teach points and lead them to leave the question open for further investigation, in this case, by pointing out the quantity of water to be made hard by the small amount of lime producing material they had seen on the shore.

EVAPORATION.—When they did the work in cooking the children discovered that when rice, beans, etc., were soaked over night in a certain amount of water there was always some of the water which had not gone into the substances, which they could not account for. It was necessary to have enough water to cover the rice during the time it was soaking, and they could not estimate the necessary amount. Therefore we had the following explanatory experiments in evaporation. These also gave some useful data for their garden work.

What affects the rate of evaporation?

EXPERIMENT (1).—Series of simple experiments, with two tin water-vessels of equal size, placed under varying conditions.—Fill the vessels with water, weigh them. Close one of the vessels, leave one open. Place them in a warm, light place for a certain length of time; weigh again. Place in a cold, dark place. Place near the ceiling, near the floor, outdoors, etc., for the same length of time. Compare the results. What caused the differences observed.

EXPERIMENT (2).—Series of experiments with the following tin vessels, each having a capacity of 16 cubic inches, but of varying depths, shapes and areas of exposed surface. Open surfaces of boxes: 4×4, 8×2, 16×1, 2×2, 8×1, 2×1, 2×4, 1×1, 1×2. Fill these with water and subject them in sets to the above conditions. In accounting for the differences noticed, it will be necessary for the children to find the contents of each box, the area of open surface, the relation of the open surfaces to each other, weight of each before and after a certain period of evaporation. Record the conclusions made by the children. See if they use these results to explain what they tried to find out in cooking. How does it explain other things which they constantly see, as the drying of clothes, of the soil, etc.? Discover if they see any connection between this work and the formation of clouds and rain, but care should be taken not to force the children to make inferences upon insufficient data.

In this connection the older children enjoy a series of experiments such as the following: They see the rain-water coming from the clouds free from mineral matter and making its way through the ground into the tree. They find in the sap of the tree the salts and mineral of the earth. They examine the wood and discover that it takes from the sap just what it needs but that most of the mineral substance obeys the power of the sun and passes with the sap on into the leaves. Their wonder and delight grow as observation teaches them, that from this point the water returns to the clouds pure as when it came, while the leaves carry the mineral back to its home in the soil. In training further they learn that the leaves moulder under the snow until, when the warmth of spring comes, they are prepared to give off the gas which would be poisonous in winter, but which is the breath of life to the opening buds in March. The very little children cannot, and we would not force them too early to understand this great law of harmony in nature, but they can catch the spirit of it, for in all their observation they are in contact with it, as they see the animals feeding upon the plants—the plants depending upon the soil, and all upon heat, water, light and air for life. The teacher's great responsibility in this direction is that she demand for the children the opportunity for constant contact with natural beautiful things, and this achieved, that she herself in her zeal does not force them beyond the limits of their natural healthful curiosity and interest.

MATHEMATICS.

EDITED BY

ROBERT J. ALEY, Ph. D., Bloomington, Indiana.

HISTORY OF ARITHMETIC.

XIX.—THE CALENDAR.

From the earliest times man has been interested in the measurement of time. The problem has more difficulties than other forms of measurement. It is troublesome to get an accurate and unvarying unit, and more troublesome to verify past measurements.

All nations everywhere have recognized the day as a fundamental unit of time. The Chaldeans and Greeks reckoned the day from sunrise to sunrise; the Italians, Bohemians and Jews from sunset to sunset. At present the civil day begins and ends at midnight, while the astronomical day begins and ends at noon. The civil day does not at all times equal a solar day. By a solar day is meant the time from one passage of the sun over the meridian of a place to the next succeeding passage over the same meridian. As the earth's velocity in its orbit is not uniform, the days determined as above are not uniform. It has been agreed that the day shall be determined by a fictitious sun, about which the earth revolves at a uniform rate. Clock time differs from sun time, being sometimes faster and sometimes slower.

The week of seven days is almost universal. Among the Jews and those influenced by them, this is easily accounted for. The week of seven days is found among the Egyptians at a much more remote time than their contact with the Jews. This may probably be accounted for by the fact that they knew seven planets, and made each day in succession sacred to one of them.

Our English names for the days of the week are of Saxon origin. The following list gives the Latin, English and Saxon names:

Latin.	*English.*	*Saxon.*
Dies Solis	Sunday	Sun's day
Dies Lunae	Monday	Moon's day
Dies Martis	Tuesday	Tuo's day
Dies Mercurii	Wednesday	Woden's day
Dies Jovis	Thursday	Thor's day
Dies Veneris	Friday	Friga's day
Dies Saturni	Saturday	Seterne's day.

The division of the days into hours, minutes and seconds is of Persian origin. The reason for the selection of twenty-four hours for a day is not known. The use of sixty seconds and sixty minutes is due to the old Persian method of counting by sixties.

The month among all primitive people was the period from new moon to new moon. The very name, month, in practically all languages is derived from the name for moon. The period from new moon to new moon is about 29½ days. Twelve such periods make 354 days, nearly a year. This probably accounts for the selection of twelve as the number of months for a year.

The determination of the exact length of year, that is the time from one vernal equinox to the next, has been a difficult question. The ancient Egyptians fixed the time at 365 days. They made the year consist of twelve thirty day months, and added five supplementary days at the end. The Mohammedans still use twelve lunar months, or 354⅓ days as a year. Originally the Roman year contained only ten months. We have the remains of their calendar in our months, September, October, November and December, which were their 7th, 8th, 9th and 10th months. Our months of July and August were formerly Quintilis and Sextilis. They were changed to their present names in honor of Julius and Augustus Cæsar.

In the reign of Numa, the Romans added two months to the year,—January at the beginning and February at the end. In 452 B. C., the Decemvirs changed the order and made February the second month. The months were then alternately 29 and 30 days in length, thus making a year of 354 days. Soon after this one day was added to the year so as to make the number of days in the year odd, it being thought unlucky to have the number even. In order to keep the seasons and months in tally, an additional month was inserted every second year between February 23 and 24. This month, called Mercedimus, consisted alternately of 22 and 23 days. This made the average year consist of 366¼ days.

SHORT CUTS—III.

MULTIPLICATION. (Continued.)

9. To square a number of two places. Square the units for the units, take twice the product of the tens and units for the tens, and square the tens for the hundreds, observing to carry when necessary; e. g., $67^2=6^2+2\times6\times7+49=4489$.

10. To find the product of any two numbers whose tens are alike and the sum of whose units is ten. Multiply the tens by one more than itself and to the product annex the product of the units; e. g., $63\times67=6\times(6+1)$ with 21 annexed $=4221$.

11. To find the product of two numbers whose units are alike and the sum of whose tens is ten. Add the units to the product of ten tens, and annex the square of the units; e. g., $78\times38=3\times7+8$ with 64 annexed $=2964$.

12. To find the product of any two numbers ending in 5. If the sum of the figures preceding the 5 is even, to their product add half their sum and annex 25. If the sum of the figures preceding the 5 is odd, to their product add the integral part of their half sum and annex 75; e. g., $175\times35=3\times17+\frac{1}{2}(17+3)$ with 25 annexed $=6125$. $275\times65=6\times27+$ integral part of $\frac{1}{2}(27+6)$ with 75 annexed $=17875$.

13. To multiply two numbers ending in 25 and 75, when the figures preceding these are the same. Multiply the number preceding by one more than itself and to the product annex 1875; e. g., $1225\times1275=12\times13$ with 1875 annexed $=1561875$.

14. To multiply by any number which is very near some number of tens, hundreds, thousands, etc. To the multiplier add enough to make it a number of tens, hundreds, thousands, etc., then multiply by this new multiplier and decrease the product by the multiplicand taken as often as there are units in the number added;

e. g., $786\times499=786\times500-786=392214$
$631\times398=631\times400-1261=251138$
$643\times79=643\times80-643=50797$

This method is of very wide application and is a great time saver.

THE BEGINNING OF THE CENTURY.

This question seems to be calling forth more discussion than its difficulties would merit. The trouble seems to center about the method of beginning to count or number years. This ought not to give trouble because the universal rule in counting is to begin with *one*. We say a child is in his first year from the day of his birth until the first recurrence of his birthday.

W. W. Ball, a noted English mathematical author, in his *Mathematical Recreations*, page 207, says: "It must be remembered that the year 1 A. D., follows immediately 1 B. C.; that is, there is no year 0." Hence, this century, the nineteenth, is not completed until the end of the present year. January 1, 1901, is the first day of the twentieth century.

In the tenth century there was a general belief that the world would come to an end in the year 1000. This was based upon Rev. xx. 7. At that time it was certainly believed that the year 1000 finished the first 1000 years after Christ.

There was great controversy on this same subject in 1800. Robert Southey in the "The Doctor," says: "They who remember the year 1800 will remember also the great controversy whether it was the beginning of a century or the end of one; a controversy in which all magazines, all newspapers and all persons took part." Southey goes on and shows incidentally that he believes the century began January 1, 1801.

The following quotation from the Papal decree making the year 1900 a holy year, settles the matter for the adherents of the Catholic church. This decree was issued in the latter part of 1899. " Since, moreover, at midnight of the last day of December of the coming year the present century will end and a new one will begin, it is very appropriate that thanks be given to God. . . ."

PERFECT MAGIC SQUARE FOR 1900.

206	253	254	237	207	252	255	236
262	229	214	245	263	228	215	244
221	238	269	222	220	239	268	223
261	230	213	246	260	231	212	247
208	251	256	235	209	250	257	234
264	227	216	243	265	226	217	242
219	240	267	224	218	241	266	225
259	232	211	248	258	233	210	249

All columns, all rows, and the two diagonals add up 1900. (Notes and Queries, Jan.)

SOLUTIONS.

Page 182.

8. By what fraction of a day does the average Gregorian year exceed the true year?

The true year is 365.2422 days (Art. 242,4). In 400 years there are 97 extra days, due to leap years. The Gregorian year is 365 da. $+\frac{97}{400}$ da. $=365.2425$ days. 365.2425 da. -365.2422 da. $=.0003$ da. excess of Gregorian year over the true year. Answer in book is incorrect.

T. H. MCCORMICK, JR., Fort Wayne.

Mr. J. H. Jaqua, of Hammond, Ind., by using the data given in *Encyclopedia Brittanicæ* finds

the excess to be 26 seconds, which differs very little from .0003 da., the difference in fact being only .08 sec.

4. In how many years will the excess in the Gregorian calendar amount to one day.

One Gregorian year exceeds the true year by .0003 days. Then to give an excess of one day would require as many Gregorian years as .0003 da. is contained in one da. or 3333⅓ years.

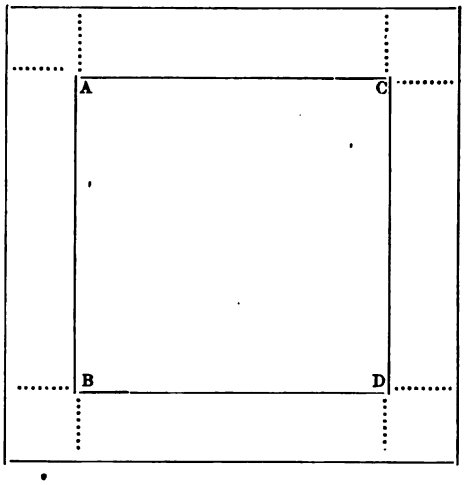
T. H. McCORMICK, JR., Fort Wayne.

Mr. Jaqua, using the excess 26 sec. finds the result to be 3323 years.

These problems are also solved by J. B. Faught, Bloomington; Daisy Amos, Fountain Town; B. H. Truman, Larville.

Page 327.

32. A road two rods wide about a square field contains one acre. What is the area of the field?



A B C D=the field.

From the area of the road (160 sq. rd.) subtract the area of each square (2 rd. × 2 rd.) in the corners of the larger square, which leaves 144 sq. rds.

144 sq. rd. = area of rectangle 2 rds. wide.

144 sq. rd. ÷ 2 = 72 side of rectangle, or length of line A B C D.

¼ of 72 rd. = 18 rd. (side of square.)

18^2 = 324 sq. rd. = 2 1/10 A.

J. H. JAQUA, Hammond.

Ottis Like, Monroe City, interprets the problem so that the outside boundary of the road is always two rods from the boundary of the field. This makes the road round the corners on a circle whose centre is the corner of the field, and whose radius is two rods. The four corners thus considered make a circle whose radius is two rods. The area of this circle is 12⅞ sq. rds.

160 sq. rds.—12⅞ sq. rd. = 147⅛ sq. rds.

147⅛ ÷ 2 = 73⅝ rds.

73⅝ rds. ÷ 4 = 18⅜ rds., length of one side of field.

[The interpretation is a legitimate one, but was probably not intended by the author. Solutions of problem 33, page 327, will appear in the March issue.—ED.]

The following persons should receive credit for excellent solutions to Nos. 32 and 33, one or both:

Ruby Garner, Owensville; Augusta Saylor, Rensselaer; T. H. McCormick, Jr. Fort Wayne; Chas. M. Kennedy, Burrows; W. J. Smith, Pleasant Mills; Bert Clark, Emison; Phil Holman, Valparaiso; G. B. Baird, Shelbyville; Ed. B. Scott, Bluffton; Everett Wiley, Whiteland; Elza Modlin, Hartford City; Daisy Amos, Fountaintown; J. B. Faught, Bloomington; Wm. S. Flinn, Cromwell; H. D. Miller, Cromwell: Mattie Everson, Crawfordsville; A. E. Morgan, Warren; F. W. Lamb, Battle Ground; Janet T. Northcott, Anderson; Edwin B. Ratcliff, Straughn; Fred Harris, Reelsville; Ross H. Bawmunk, Saline City; Thomas Cummins, Acton; Orville Collins, Bainbridge; Gertrude Meredith, New Castle; J. A. Jones, Logansport; Fred C. Ehret, Wakarusa; John A. Bear, Mill Creek; B. H. Truman, Larville; M. C. Baumgarten, Vandalia; C. P. Paris, Michigantown; Omer Truelove, Alfordsville; Florence Smith, Kokomo; Frank Bells, Pine; Ernest Applegate, Thorntown; Philip Kabel; C. C. Kagey, Elizabethtown; F. B. Williams, Freedom; Geo. A. Gray, Lochiel; Jesse Blue, Camden; Louis W. Clements, Elnora; Mattie D. Cato, Duff; Theo. Jackson, Alfordsville; G. F. Hightown, West Franklin; N. H. Hedrick, Logansport; Edward Carter, Coloma; Jno. H. Doyle, Loogootee; Mabel Stark, Cayuga; Harden Thomas, Rockport; Laura M. Haines, New Carlisle; Pearl Hungerford, Blue Ridge.

SOLUTIONS REQUESTED.

(1). Give a simpler dissection to show the truth of the Pythagorean theorem, than that given on page 324.

(2). Problem 20, page 326.

(3). Give a simple proof that the altitudes of an equilateral triangle meet in a point. See problem 28, page 327.

(4). What answers, if any, are incorrect in Partial payments?

(5). Solve No. 12, page 219.

(6). Solve No. 22, page 326.

[Send all solutions to the Editor, Bloomington, Ind., before Feb. 14.]

Answers to the following problems have been reported as wrong:

No. 7, page 338, should be 104.74 yd.

No. 8, page 108, should be yds. instead of $'s.

No. 7, page 160, should be 19.13942.

No. 14, page 186, should be 6 oz., 4 dr., 3.2 gr.

No. 23, page 192, should be 10 sq. rd., 6 sq. yd., 2 sq. ft., 60 sq. in.

No. 14, page 215, should be $981.60.

No. 22, page 215, should be 1296 (second pt).

No. 47, page 286, should be 45.13 rd.

The responses to the queries have been very gratifying. It is to be hoped that a larger number will respond for February. Send in queries, solutions and corrections.

MATHEMATICAL SECTION.

The Mathematical Section of the State Teachers' Association met in the House of Representatives Tuesday, December 26, 2 P. M. About one hundred and twenty-five teachers of mathematics were present. Never before in the history of the section were so many in attendance, nor was greater interest ever before shown. Milton V. Gantz, principal of the Noblesville high school, presented a strong paper under the title of "Some Suggestions on the Teaching of Algebra and Geometry." Among the many strong points of the paper, perhaps the best was the vigorous plea for better preparation, broader scholarship, deeper insight into mathematics, on the part of the teacher. Mr. Gantz presented this in a way that won the approval of his hearers.

E. C. Welborn, teacher of mathematics in the Anderson high school, exhibited a number of pieces of illustrative apparatus for geometry work. He prefaced his exhibition by a clear and succinct statement of the place of apparatus in geometrical teaching. The apparatus was made of cardboard, rubber and wire. It was admirably constructed and illustrated in a most telling manner many problems in logic and continuity. The apparatus shown was that used by Mr. Welborn in his own classes. The superior work in mathematics done by his pupils, bears testimony that the means and methods employed are correct.

Professor C. A. Waldo of Purdue, presented a paper on "Mathematics and Progress." This paper is the best summary of the relation of mathematics to progress that has yet been made. It will be presented in full in a future number of THE EDUCATOR.

The officers for the coming year are: President, Principal Wertz of the Columbus high school; Chairman of executive committee, Professor Higgins of the state normal; Secretary, Amelia Waring Platter of the Indianapolis schools.

NOTES.

Longmans, Green & Co. have recently issued a *Plane Trigonometry*, by Dr. Daniel A. Murray of Cornell. The author treats the whole subject in a splendid way. He deserves special commendation for emphasizing the graphic method. The book will certainly find a wide field of usefullness.

The articles on noted Arithmetics will be omitted for a few issues and the space given to some articles on the Calendar.

ANNUAL MEETING OF INDIANA TEACHERS.

THE plan of requiring enrollment and the payment of fees as a condition of admittance to the general sessions of the Indiana state teachers' association was successfully tried at the last meeting. This may or may not account for the fact that the enrollment was unusually large, but the truth is that both attendance and enrollment were excellent. The program was characterized by its usual embarrassing fullness. There were some slight departures in placing upon the program such speakers as Rev. F. E. Dewhurst and Hon. John L. Griffiths, men not actively engaged in the work of the schoolroom. The wisdom of this course was fully justified by the interest shown in their addresses, and should be commended to succeeding executive committees.

The state building was practically thrown open to teachers during the association, and every available room seemed occupied by some one of the section meetings. The general association was well accommodated in the hall of representatives. The chief features of the first session were the address of F. M. Stalker, the retiring president, and the inaugural address by the incoming president, W. H. Glascock. Pro-

fessor Stalker's address, well timed but brief, was in part as follows:

One year ago I tried to maintain the proposition that he is best educated who is best prepared to meet the conditions that confront him in life. To-night I believe this proposition more firmly than I did one year ago. The problem of education must take into account the nature of the individual and the life that is before him. If I were to state my pedagogical creed in an abridged way it would be something like this: The teacher as the guide in the process of education must take the child as the point of departure and perfect character as the goal. The child is body and spirit. As body the problem is hygienic. As spirit triple forces are involved, and these triple forces drive abreast instead of tandem These same triple forces have driven abreast through all the ages, and have left to childhood as legacies, science, art and the institutions. The problem of education is one of bringing into unity the individual and institutional life, using science, art and the institutions as means. On the side of intelligence the progress must be slow and steady through all the stages from sensation to insight, until the child standing on the heights shall pray, "O God, I think Thy thoughts after Thee." On the side of feeling, the growth must proceed from the general, disinterested wonder stage of childhood through all the realms of particular, interested, emotional life in truth, beauty and goodness, till the child shall breathe the prayer, "O God, I feel the splendor of the true as Thou in Thy majesty hast clothed it on in nature and in the works of man." On the side of will the development must be slow and steady from the impulsive stage of life through all the rounds that lead to self-direction, till the child, free indeed, shall pray, "O God, I long to live in Thy perfect personality as Thou hast manifested Thyself unto men." This is the problem that is to be solved, and it is to be solved by the teacher if it is ever solved. This is the whole story—the point of departure, the goal, and the means. Character is the great thing and its essential elements are truth, beauty and goodness.

Professor Glascock's paper was well received, and considering the growing interest shown by teachers in all that pertains to art in the life and work of the school, his choice of subject was particularly happy. The address has already reached the readers of THE EDUCATOR in the January issue, but we feel like emphasizing the thought in the paper that urges the carrying over of knowledge and appreciation into action, into creation. "The child may look upon the beautiful and love it to its fullest capacity, but it is only when he strives to express himself in terms of beauty that he grows most toward the beautiful. The child must not only be a beholder, but likewise a producer of art if he is to come into the fullest appreciation and enjoyment of the beautiful embodied in art forms."

The papers Wednesday morning were by Rev. F. E. Dewhurst on "Some of the Social Aspects of Education," and Mrs. May Wright Sewall on "The Relation of Society to the School." Emphasizing, as they did, the sociological phases and problems of the school, both of these papers and the discussions of them held the large body of teachers in close interest. It was noticeable, too, that Dr. Dewey's new book, *The School and Society*, had been read and approved by the various speakers and that his leaven is already at work.

Dr. Dewhurst stood for the principle that education should be spontaneous; that what the child needs is the direction of his activities and a sense of his place in the world. The school should be as natural as the home with which the curriculum makers have not yet tinkered. Professor J. F. Brown accepted the plea for the spontaneous and natural, but insisted that there should be method and that this should be based upon a rational psychology. A teacher needs above all a knowledge of child mind, and of the working of mental activities. Professor J. D. Forrest showed how social and commercial conditions have changed, and how these in turn have changed the educational problems. The three R's were originally designed for adults, and the training in them was practically that of a business school. The new requirements grow out of changed social relations. The boy formerly lived on a farm and came in contact with life at a great many points. He learned how to do things. Now he lives in a flat where he simply presses the button and the thing is done for him. Hence arises the need of manual training in its various forms.

In Mrs. Sewall's paper the main thought was that of the teacher's isolation. This in turn isolates the school and places the child in an unnatural atmosphere. Larger participation by the teacher in the social and business activities of a community would naturalize this atmosphere to the lasting good of the pupils.

The session Wednesday afternoon was divided between child study and manual training. The first paper was read by President A. H. Yoder, on "The Management of Children During Adolescence". The speaker discussed and illus-

trated the vital importance of the pubescent period in its relation to adult life. Dr. L. S. Davis, speaking on the same subject, recognized the intense natural activities of the period and said that the teacher's problem was not how to repress, but rather how to transmute these. He pleaded for those studies and influences in the high school that develop the best ideals.

On the subject of manual training Chas. E. Emerich said: "The world must now adapt itself to the age of iron, steel and electricity. Manual training is not intended for some special line of industrial work, and a manual training school is not a trade school. Manual training is not proposed on account of its possible effects upon so-called practical value. Manual training depends upon observation and experiment and leads necessarily to construction. Hands that have been trained so as to acquire skill, eyes and ears that have been trained to be acute are more useful in any profession or business than those which have not been so taught."

The annual address Wednesday evening was by Hon. John L. Griffiths, who chose for his subject "Rudyard Kipling." While with-holding judgment as to his final place in literature, the speaker insisted that Kipling is a force to be reckoned with. His apparent familiarity with so many and so varied phases of life was considered as a reply to the theory that Shakespeare could not have written the plays which bear his name. "In the case of Kipling, as of Shakespeare, it is the divine gift of imagination that has quickened and deepened his sympathies with men of his class and race, and given him free entrance to their hearts." A tribute was paid to Kipling's love for children. To quote his own words, "If a man keeps very quiet, and humbles himself and refrains from looking down to his superiors, the children will sometimes be good to him, and let him see what they think about the world." In illustrating the positive character of Kipling's faith Mr. Griffiths said that if Kipling had written *Crossing the Bar* he would have said triumphantly, "I know I will meet my pilot face to face." His longer tales are full of vivid coloring, dramatic situation, marvelous bits of description, rare portrayals of unique incident and keen, discriminating criticism on interesting phases of life. They sparkle with wit and are tremulous with pathos. They furnish us with new points of view on old themes. They are clever in phrasing and abound in passages of rare beauty and power, but they do not treat of the development of character and of the play and interplay of the titanic forces of good and evil which contend for the possession and dominion over the human soul.

Thursday morning Superintendent Goss read a paper deprecating the low professional standing of teachers not only in Indiana, but even in New England and the rest of the country. "Our teachers need more training and they need it badly, but they need of all things, scholarship, culture, life." Superintendent W. H. Sanders of Rensselaer declared that better salaries would help largely in securing better preparation, and said that he had found it very difficult to keep some of his best teachers on account of the small payment allowed them.

The general association closed with an Indiana love feast. J. W. Carr of Anderson read a paper advocating a more systematic and thorough study of the history of Indiana. There is doubtless truth in his statement that more people know the history of Greece and Rome than of this their own state. Mr. Carr urged upon the reading circle boards the importance of encouraging and aiding a study of Indiana history. Professors C. W. Hodgin and R. A. Ogg and President W. A. Bell commended the ideas set forth in the paper, referring to the richness of historical matter that could be made easily available. Professor George A. Dennison of Springfield, Mass., was introduced and insisted that the possibilities open to Indiana teachers for collecting and organizing historical material was not only a privilege but a duty. As a result of the whole discussion a resolution was adopted asking for a committee to consider the introduction of Indiana history and civics into the public schools, and to devise ways and means by which local and state historical material may be collected and preserved. A committee of ten was appointed, J. A. Woodburn chairman.

A very important step was the organization of an educational council of thirteen members whose duty it shall be to investigate all subjects of an educational nature and report each year at the state association.

The officers chosen for the coming year are as follows:

President, R. I. Hamilton; Secretary and Treasurer, J. R. Hart; Recording secretary, Miss Lella Vaught; chairman executive committee, W. P. Hart.

D. K. Goss was appointed to succeed himself as member of the reading circle board, and C. M. McDaniel to succeed J. A. Woodburn.

The various sections, so far as heard from, held very profitable meetings, and it is a matter of regret that THE EDUCATOR can not give a detailed report of each.

THE TOWNSHIP INSTITUTE.

SIXTH MEETING.

NOTE—It should be borne in mind that the outline on Organic Education is based upon Miss Scott's book by that title, published by D. C. Heath & Co., 90 cents, and the outline on Reading upon Professor Clark's *How to Teach Reading*, published by Scott, Foresman & Co., 75 cents.

ORGANIC EDUCATION.

In the article given last month explaining the outline the attention was centered on the characteristics belonging to the typical character. For example, in regard to Hiawatha, it was shown that he could be considered under appearance, clothing, home, food, school, social life, industrial life, the state and the church. These were given to furnish material for comparison with the lives of the children in other stages of development. The advantages in the process of comparing appear to be the following:

1. It cultivates the twofold activity of mind —the discovery of similar attributes and the discovery of unlike characteristics.

2. It emphasizes features in the two conditions compared that would otherwise escape notice.

3. As an ultimate result, however, it brings into prominence the unity of the race in its progress.

(a) For example, Hiawatha is compared with the children themselves as to *appearance*. This leads to measurement. Under measurement is that of measuring time. The Indian boy does that by the changes of the moon, the children in school by the clock and the watch. This shows marks of unity and marks of difference, but unity is the prominent characteristic. The Indians and the people represented by the children in school were alike in endeavoring to improve their condition by devising an instrument that would give exact divisions of time and thus give them mastery over time, and the events contained in it.

In the second place Hiawatha is compared with the children in school as to his *clothing*. This comparison is made on these points—material, the work done upon it, the implements employed, its form, its usefulness and its beauty. This ought to prove very interesting to the children. In a very concrete way it would show points of unity and points of difference between themselves and the Indians, but again the predominant impression would be that of unity. The Indians and the whites alike are engaged in a struggle to secure that mastery over time, space and weather that will enable them to devote their attention to higher things. It will also be evident that the occupations necessary to secure this mastery come as blessings, although in disguise, bringing a higher bodily intellectual and moral life. There is another important unity to be brought out in this comparison as to the clothing. This is the unity of society itself. The children will be compelled to notice their dependence. Each person in society will be seen to be laboring directly for others and only indirectly for himself. Thus the altruistic tendency in the child will be strengthened. Beauty, the stages of growth in appreciating it, and its true function as to clothing may be touched upon.

(c) The comparison in regard to the *house* of the Indian boy, and the house of the pupils is to relate to appearance, material, tools used, size, cost and comfort with especial reference to lighting and warming. These topics are concrete, important, and interesting. In the study of them the unity of the school children with the Indians, and their difference from them would claim attention, but as before, the prevailing impression is that of unity of nature and purpose. By the Indians and by the whites the house is built to promote a higher life in the builders by giving them a mastery over weather, and by furthering the isolated, concentrated effort of the family on its own distinct problems. With an enclosure that separates from the world and affords light and warmth there can be undisturbed study and undisturbed consultation concerning those things that are peculiarly required by the given family to fit it to go out into the world and perform, in an adequate way, its distinctive work.

(d) There comes in the next place the comparison as to *food*. This also presents a fine opportunity to discover traits of unity and difference. As in all previous cases, however, the thread of unity is strongest. Food of the right kind and quantity changes the body so that it is a help to the progress of spirit rather than a hindering limit. There are two extremes—too little food, and too much food. There are two extremes in the disposition of people—too little attention to food, and to great engrossment in eating and drinking. It is an important element in the child's education to have studied

with care food itself and the ways of obtaining, preserving, preparing and serving it. Such topics cannot fail to give higher value to his scope of knowledge and to make it evident that the whole process of obtaining and serving food affords a valuable field for the increase of bodily, intellectual, moral and æsthetic power and insight.

(e) At this stage the *school* of Hiawatha is compared with that of the pupil. This comparison will relate to the place of instruction, course of study, hours of study, etc. Such examination will widen their idea of the school. They will find that every people, even the savage tribe, has a school of some kind. It will be noticed that such an institution is necessary to equip the children for effective cooperation in that society. It is to give the child the fundamental ideas of the social organism, and to equip him with the means of expression and communication. It is to a certain extent, to equip him for some vocation in life. With Hiawatha his school was to equip him to endure hardships, to hunt the deer, etc. The comparison will lead to the important thought that school extends throughout life and is at work in all places and in all institutions.

(f) The *social* life of Hiawatha leads to an interesting comparison. Each child has his special friends, as had Hiawatha. Each community, as had that early Indian community, has its anniversaries, its feast days, its memorial days, its games and its plays. Through society the pupil is to become acquainted with his larger self, in seeing that each exists for all, and all for each.

(g) Comparison arises naturally concerning *industrial* life. This involves a consideration of the modes of supplying food, clothing, shelter, objects of beauty, etc. The opportunity is given to trace the finished product back to the raw material. The pupils in this comparison, will discover that each community organizes an industrial system in which each person works directly for others and only indirectly for himself. The tendency is in part, at least, to make the worker altruistic. Thus even the industrial system, which at first seems to be purely selfish, tends to make each individual find his larger self, the finding of which is indeed the true aim of all endeavor.

(h) Another important topic for comparison is furnished by the *tribal organization* of the Indians. This is the government or state of the Indians. It has marks of unity and of difference with the city government, with the state government, and with all the other forms of civil life coming within the pupil's knowledge. This comparison will lead the children to see that the race, in all stages of its existence, has organized, instinctively, forms of government that are all altruistic in tendency. In the state the citizen learns to surrender time, property, and the physical life itself for the state. By dealing out justice, the state helps the individual to annul his selfishness.

(i) Finally the *church* as an organization of the pupil's own civilization is to be compared with the crude religious organization and ceremonies of the Indians. In the church the selfishness of the individual is to be gotten rid of for the sake of unity with the Universal Self. Those things in the life and conduct of a person that are alien to God's character are held in his organization to be "null and void." Only a life of worth is the true worship.

Thus the comparison will prove a highly beneficial mode of work. It will give the essentials of knowledge and will create the habit of seeking, in regard to two or more objects, their unities and their differences in order to discover the fundamental unity. Comparison then has three stages:

a. The discovery of unities.

b. The discovery of differences.

c. The discovery of a prevailing unity revealed by these unities and differences.

HOWARD SANDISON.

HOW TO TEACH READING IN THE PUBLIC SCHOOLS.

OUTLINE.

LITERARY INTERPRETATION. (Page 231.)

a. Show that the significant changes in rhythm are due to emotional changes. See pp. 240 to 248.

b. Criticise the author's analysis. Pp. 248 to 254.

c. In the remaining time of the institute it would be well to discuss the analysis of *Horatius*. Pp. 277 to 284.

COMMENT.

In this the last paper of the series I would ask the teacher to consider with me the place that literature is to occupy in the class room. For many months we have studied how to develop the power of oral expression and how to test that power. But to what end? Has it not become clear that in order to get good reading there must be clear thinking and deep feeling, intense feeling? It is, then, to good literature we must turn for our stimulus. Good literature properly understood stimulates to good expression, and good expression in its turn reacts upon our feelings and leaps to deeper and more spiritual interpretation. The greater the necessity

for study in any selection the greater the possible good. The more time spent to discover the spirit of a piece of literature the more it means to us and the more we love it.

Let then, every reading lesson be primarily a lesson in interpretation. Let us strive to direct the pupils so that they may see and feel the poetry. If it takes an hour to do this, let us spend that time cheerfully; if it takes a week, let us devote that week with no less cheerfulness. The meaning of words can be acquired in a few minutes and can be forgotten as quickly. To appreciate the soul of literature, which is the heart of the infinite pulsating in the song of man, may—nay, must—take time, but that soul once grasped can never be lost. And why? Because it becomes part of ourselves, we have become poetic, if not poets. The mathematics, the geography, the spelling lessons are more or less mental gymnastics; the study of literature, the coming into communion with the prophets and seers of humankind, those into whose ears God has whispered his secrets, and to whose eyes he has revealed untold splendors, is soul culture—the highest religious training.

It is often argued that we have no time for this art culture; that we must be practical; that we must train our pupils so they may earn their bread and butter. I reply, that our schools must do more. I ask, What are you giving to your children to do when they have earned their bread and butter? What have you given to the farmer, the clerk, the merchant, to enable him to live, not exist? What respite can he seek from the world's care and fortune's buffets? What consolation can he seek for fate's unkindness? What balm for Heaven's visitations? Practical, practical training? The only training that is practical is that which deals with the higher life, which aims to reveal the man to himself. How well has Rosseau said that culture is not to enable one to make a fortune, but to enable one to live without it!

Literature is the most available of the arts. Let us use it constantly as a culture study. Let us lead the children to love it in order that its great lessons may sink into their souls to comfort, strengthen and uplift. And so withal literature may prove to be the most practical of all our subjects. For who can doubt that the man or woman who has culture must succeed better than those without it? Who can believe that the man who knows and loves "Evangeline," Gray's "Elegy," Keats' sonnet, "The Poetry of Earth is Never Dead," "As You Like It," will make a practical success of life sooner than those whose eyes are closed to the glories of nature, and whose ears are sealed against the whispering breezes, the babbling brooks and voices of the birds? What better preparation can one make for the world's struggle on the morrow than an hour's communion with a great poem or a great novel? And, the practical battle of life decided in our favor, how better can we descend the hill into the valley than in the companionship of our great writers?

Let us then see to it that we give our children the opportunity of meeting the great masters face to face, for so only can we be said to realize the highest function of the teacher, which is to train the pupil physically, mentally, and above all, spiritually.

We need not neglect the mental, the practical, but let us not lose sight of the eternal in the temporal. Let us show our political, our practical school boards that they are blind. If we can't do that we can yet introduce poetry into our class-rooms and so stimulate the love for it that the children will demand it, and when they become school board men, and teachers and superintendents our victory shall be won.

S. H. CLARK.

ADOLESCENCE.

OUTLINE.

Matters of great import have always found their way into standard literature, hence references to boyhood and girlhood are frequent. The most beautiful description of the change of a plain, doll-loving girl into a dreamy romantic young woman is to be found in Victor Hugo's *Les Miserables*, when he describes Cosette.

"The girl had not only grown, but was idealized; as three days in April suffice to cover some trees with flowers, six months had been sufficient to clothe her with beauty—her April had arrived."

Tom and Maggie Tulliver in *The Mill on the Floss*, are two characters true to life, the latter being a good picture of George Eliot at the age in question.

"He, Tom Tulliver, was by no means indifferent, and his pride got into an uneasy condition which quite nullified his boyish self-satisfaction, and gave him something of a girl's susceptibility."

Dickens puts a great deal of his own experience into the character of David Copperfield.

In *Little Women* Miss Alcott depicts her girlhood life and shows a keen sympatny with pubescent children. *Little Men* is also interesting.

"I think she is growing up, and so begins to dream dreams and have hopes and fears and fidgets, without knowing why or being able to explain them."

Shelley's adolescent life is the most dramatic of the poets

"Thoughts of great deeds were mine, dear friend, when first
The clouds which wrap this world from youth did pass,
I do remember well the hour which burst
My spirit sleep "

Many references are available. Holland's *Arthur Bonnicastle;* Warner's *Being a Boy*; Marie Bashkirtseff's Journal; *The Making of a School Girl*, etc.

COMMENT.

The religious experiences of George Sand as told in her autobiography and commented on by

Sully in his *Studies of Childhood* furnish an interesting account of one phase of this subject in literature. Even when children accept and adopt the religious beliefs of their parents the strange interpretations they make of the mysteries sometimes are revealed and serve to show how important the subject is to their young lives. But when the religion of the parents is set aside and one is created to meet the demands of the growing soul, a peculiar interest attaches to the creation. Aurore Dupin's experiences probably grew out of the peculiar conditions in her life in her childhood. Her mother is described as ardent, imaginative, and of a simple and confiding faith, and from her "she had caught some of the glow of a fervent piety." Then she went to live with her grandmother who "equalled her master Voltaire in cynical contempt of the revered mysteries," and who attempted to counteract all the child's religious tendencies. This she might have done but for her social position which she took into consideration, and so permitted Aurore to attend mass and prepare for the First Communion. "In this way the young girl underwent the uncommon if not unique experience of a regular religious instruction, and concurrently with this and from the very hand that had imposed it, a severe training in rational scepticism and contempt for the faith of the vulgar." The final instructions of the grandmother on the day of the First Communion were "not to outrage Divine wisdom and human reason to such an extent as to believe that she was going to eat her Creator." This and the presence of her grandmother threw her into great confusion and she was on the eve of rejecting the whole procedure as an act of hypocrisy when relief and peace came to her in her recognition of the words of Jesus as a metaphor. Out of such an experience as this Aurore constructed a religion of her own. To use her own words:

Since all religion is fiction (I thought), let us make a story which may be a religion, or a religion which may be a story. I don't believe in my stories, but they give me just as much happiness as though I did. Besides, should I chance to believe in them from time to time, nobody will know it, nobody will dispel my illusion by proving to me that I am dreaming.

Her new divinity, which was called Corambé, came to her in a dream and she describes him as follows:

He was pure and charitable as Jesus, radiant and beautiful as Gabriel; but it was needful to add a little of the grace of the nymphs and of the poetry of Orpheus. Accordingly he had a less austere form than the God of the Christian, and a more spiritual feeling than those of Homer. And then I was obliged to complete him by investing him on occasion with the guise of a woman, for that which I had up to this time loved the best, and understood the best, was a woman —my mother. And so it was often under the semblance of a woman that he appeared to me. In short, he had no sex, and assumed all sorts of aspects. Corambé should have all the attributes of physical and moral beauty, the gift of eloquence, the omnipotent charm of the arts—above all the magic of musical improvisation. I wished to love him as a friend, as a sister, while revering him as a God. I would not be afraid of him and to this end I desired that he should have some of our errors, weaknesses. I sought that one which could be reconciled with his perfection, and I found it in an excess of indulgence and kindness.

Her religious idea developed and she composed a series of sacred books which was followed by a temple and a ritual. She found comfort and delight in her hero-divinity and for her temple "she chose a little wood in the garden, a perfect thicket, into which nobody ever penetrated. Here, in a tiny, natural chamber of green, carpeted with a magnificent moss, she proceeded to erect an altar against a tree stem, decking it with shells and other ornaments and crowning it with a wreath of flowers suspended from a branch above. The little priestess, having made her temple, sat down on the moss to consider the question of sacrifices." She says:

To kill animals, or even insects, in order to please him, appeared to me barbarous and unworthy of his ideal kindliness. I persuaded myself to do just the opposite—that is, to restore life and liberty on his altar to all the creatures that I could procure.

I had then delicious reveries, and while seeking the marvelous, which had for me so great an attraction, I began to find the vague idea and the pure feeling of a religion according to my heart.

But one day a boy playmate "tracked her to her secret grove. He was awe-struck at the sight of the pretty little altar and was for embellishing it still further, but she felt the charm was destroyed."

From the instant that other feet than mine had trodden his sanctuary, Corambé ceased to dwell in it. The dryads and the cherubim deserted it, and it seemed to me as if my ceremonies and my sacrifices were from this time only childishness, that I had not in truth been in earnest. I destroyed the temple with as much care as I had built it; I dug a hole at the foot of the tree, where I buried the garlands, the shells, and all the rustic ornaments, under the ruins of the altar.

She had awakened. The change had come. With the destruction of her temple came the destruction of the old self. With the burial of the garlands that had adorned the altar she buried the old self and became conscious of a new life which she could clothe with new meaning. Some of us wake early and some of us

wake late. For some of us the span of childhood is brief, and for others of us it lasts till so late a day that but a brief space remains for the work we have to do.

FRANCIS M. STALKER.

INDIANA COUNCIL OF EDUCATION.

At the recent annual meeting of the Indiana State Teachers' Association a resolution was adopted providing for the organization of a state council of education. This action of the association is one of the most important moves in the educational work of Indiana during recent years.

The National Educational Association has for several years had a "Council of Education," consisting of a limited number of prominent educators selected from the whole country to whom the association, from time to time, refers educational questions of importance for study and consideration. The work and reports of this national council have been a great uplifting influence in the school work of America. They have crystallized and put into form for popular circulation the best thought of the N. E. A. pertaining to educational questions. Several of the states have followed the National Association in this matter, and have organized state councils which have been found to be of great value.

The object of the Indiana council will be to investigate and report upon various important subjects of an educational nature relating to Indiana. The result of its work will appear in the form of reports made annually to the state association. These reports may, from time to time, by direction of the association, be printed and circulated throughout the state.

Early in December last, Dr. W. L. Bryan of Bloomington, called the attention of several of the teachers of the state to the need of such a council organization in Indiana, and urged, that at the approaching annual session of the State Association, some action be taken looking to the organization of such a Council.

The matter came up in the form of a resolution submitted by T. A Mott, superintendent of the Richmond public schools. The resolution passed unanimously and provided that the council be composed of twenty-five members, one from each of the congressional districts and twelve at large, those from the congressional districts to be appointed by the president of the State Teachers' Association, and the members so appointed to have power to select the other twelve. The members will be divided into three classes, consisting respectively of seven, eight and nine persons. The membership of the persons of the first class will expire in one year, and that of the second class in two years, and that of the third class in three years. After that the membership of all persons will be for three years. The council will be expected to make to the Association such reports of its investigations and work as shall, in its judgment, subserve the educational interests of the state.

In accordance with the provisions of the resolution, which was unanimously adopted, President Glascock appointed as members of the council representing the thirteen districts the following persons:

First—W. A. Hester, Evansville.
Second—W. L. Bryan, Bloomington.
Third—George R. Wilson, Jasper.
Fourth—George A. Roberts, Greensburg.
Fifth—Howard Sandison, Terre Haute.
Sixth—T. A. Mott, Richmond.
Seventh—Nebraska Cropsey, Indianapolis.
Eighth—W. R. Snyder, Muncie.
Ninth—W. A. Millis, Attica.
Tenth—Mrs. Emma Mont McRea, Lafayette.
Eleventh—Adelaide Baylor, Wabash.
Twelfth—J. N. Study, Ft. Wayne.
Thirteenth—Noble Harter, Warsaw.

The organization of the Council will be completed at an early date. Many of the ablest educational workers of the state will be members of this body and much will be expected from it as a force to lead and guide future movements in the school work of the state.

OUR OLD BANNER.

Our old banner is the only true banner of liberty; it has gathered its millions from lands of tyranny and gladdened their hearts with freedom; it rejoices the eye and heart of every liberty loving man wherever seen around the globe.

It is the banner of freedom to-day, it was yesterday, and a century ago.

'Tis the same that waved over and inspired the noble band of unshod patriots that gained independence,
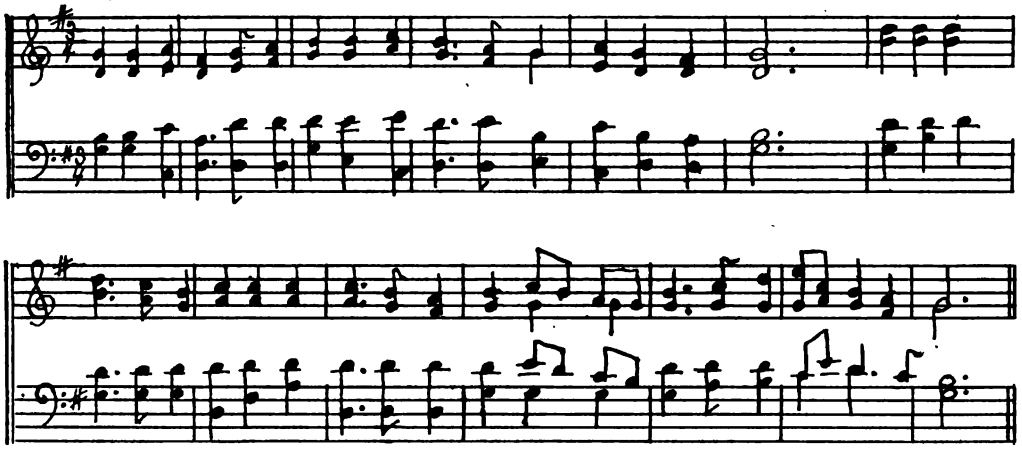
On more than a hundred hardly contested fields for the Union as borne aloft, it gladdened the weary, the wounded and dying. It took the manacles from the limbs of men chained in the deep gulf of despair, and stood them erect in the glorious sunlight of freedom.

All hail! proud old flag! no ruthless hand shall despoil thee; as the stars that deck the plains of heaven are the glory of the night, and light up the footpath of man, so shall these stars be the glory of this nation, shedding their light along the pathway of liberty.—*John A. Logan.*

FOR WASHINGTON DAY, FEBRUARY 22ND.

NOTE.—February is especially appropriate for a celebration which shall have the idea of reverential patriotism uppermost in it. Such a special exercise may be arranged with either Lincoln (Feb. 12th) or Washington (Feb. 22nd) as central figure or a general program may be made with both as subject. In February also occur the birthdays of two of our most noted literary men, Longfellow and Lowell, so that this month offers unusual opportunities for special days. It is very easy to overdo the matter of special day exercises, however, and much more of permanent value is achieved if in the course of the school year three or four important dates are selected and a careful consideration given to their significance. We suggest the celebration of Washington Day as the special subject this month and offer a simple program which has as its main feature some of our familiar national and patriotic airs. In some cases other than the original words are used, or, as in the case of "America," the hymn is extended by the addition of stanzas from other sources. Most of these songs are familiar to every teacher, perhaps to most pupils, and yet it has seemed desirable to have the music for at least a few of them for handy access. It is urged that the date selected is a fitting one on which to rehearse with fervor all these patriotic (and other) airs and fix them permanently in the minds of the pupils. If the various tributes and selections are given with spirit much enthusiasm will result. While the "Bonnie" selection may not strictly belong in the limits indicated it is used for the special benefit of the little folks. No effort has been made to trace the source of all the material used, but special attention is called to "How to Celebrate Washington's Birthday" (E. L. Kellogg & Co., New York,) and to programs prepared by E. L. Hendricks for THE INLAND EDUCATOR, February, 1896 and November, 1896. CHAS. M. CURRY.

1. SONG: "America."



(Use the regular words for this opening song. The same tune with other words is repeated between some of the tributes.)

2. SELECTION:

THE TWENTY-SECOND OF FEBRUARY.

Pale is the February sky,
And brief the midday's sunny hours;
The wind-swept forest seems to sigh
For the sweet time of leaves and flowers.

Yet has no month a prouder day,
Not even when the Summer broods
O'er meadows in their fresh array,
Or Autumn tints the glowing woods.

For this chill season now again
Brings, in its annual round, the morn
When, greatest of the sons of men,
Our glorious Washington was born.

Lo, where, beneath an icy shield,
Calmly the mighty Hudson flows!
By snow-clad fell and frozen field
Broadening the lordly river goes.

The wildest storm that sweeps through space,
And rends the oak with sudden force,
Can raise no ripple on his face,
Or slacken his majestic course.

Thus 'mid the wreck of thrones shall live
Unmarred, undimmed, our hero's fame;
And years succeeding years shall give
Increase of honors to his name.—*Bryant.*

3. SONG:

HYMN FOR WASHINGTON'S BIRTHDAY.

(To the tune, "America.")

All hail, thou glorious morn
That Washington was born!
All hail to thee!
Whether thy skies be bright,
Or veiled in clouds of night,
To thee in joyous right
Our song shall be.

All come with glad acclaim,
To sing and praise thy name,
O Washington!
O'er all this land so free,
Hearts turn with pride to thee,
Champion of liberty,
Columbia's son.

Let Freedom each year bring
Chaplets as fresh as spring
To deck her son!
While Freedom's angels stand
Guard o'er that flag and land
Saved by the mighty hand
Of Washington.

—*Charles S. Davis.*

4. SELECTION:

WASHINGTON.

Soldier and statesman, rarest unison;
High-poised example of great duties done
Simply as breathing, a world's honors worn
As life's indifferent gifts to all men born;
Dumb for himself, unless it were to God,
But for his barefoot soldiers eloquent,
Tramping the snow to coral where they trod,
Held by his awe in hollow-eyed content;
Modest, yet firm as nature's self; unblamed
Save by the men his nobler temper shamed;
Never seduced through show of present good
By other than unsetting lights to steer
New-trimmed in Heaven, nor than his steadfast mood
More steadfast, far from rashness as from fear;
Rigid, but with himself first, grasping still
In swerveless poise the wave-beat helm of will;
Not honored then or now because he wooed
The popular voice, but that he still withstood;
Broad-minded, higher-souled, there is but one
Who was all this and ours, and all men's—
WASHINGTON.

—*Lowell.*

5. SONG:

BIRTHDAY OF WASHINGTON.

Welcome thou festal morn!
Never be passed in scorn
Thy rising sun.
Thou day forever bright
With Freedom's holy light,
That gave the world a sight
Of Washington.

Unshaken 'mid the storm,
Behold that noble form,—
That peerless one,
With his protecting hand,
Like Freedom's angel, stand,
The guardian of our land,
Our Washington.

Traced there in lines of light,
Where all pure rays unite,
Obscured by none:
Brightest on history's page,
Of any clime or age,
As chieftain, man or sage,
Stands Washington.

6. SELECTION:

THE VALUE OF WASHINGTON.

The value of Washington to his country transcends that of any other man to any land. Take him from the Revolution, and all the fervor of the Sons of Liberty would seem to have been a wasted flame. Take him from the constitutional epoch, and the essential conditions of union, personal confidence in a leader, would have been wanting.

From the moment that independence was secured no man in America saw more clearly the necessity of national union, or defined more wisely and distinctly the reasons for it. He is the chief illustration in popular government of a great leader who was not also a great orator. He was felt as both an inspiring and a sustaining power in the preliminary movement for union, and by natural selection he was both president of the convention and the head of the government which it instituted.—*Geo. William Curtis.*

7. SONG:

BIRTHDAY OF WASHINGTON.—(Con.)

Name at which tyrants pale,
And their proud legions quail,
Their boasting done,
While Freedom lifts her head,
No longer filled with dread,
Her sons to victory led
By Washington.

Now the true patriot see,
The foremost of the free,
The victory won.
In Freedom's presence bow,
While sweetly smiling now
She wreathes the spotless brow
Of Washington.
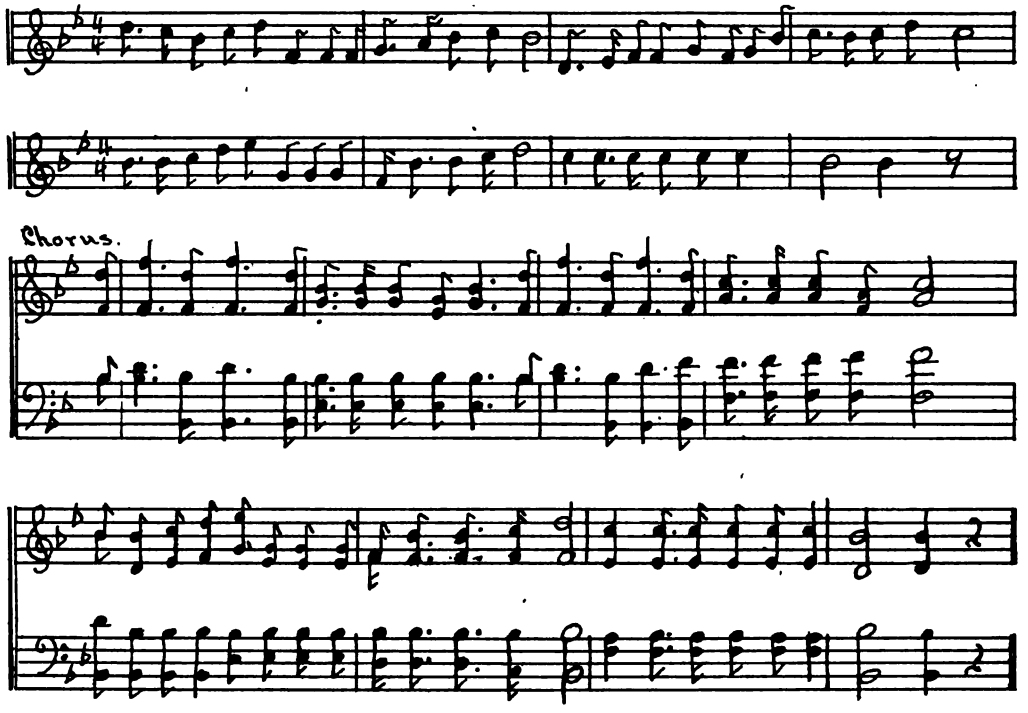
Then, with each coming year,
Whenever shall appear
That natal sun,
Will we attest the worth
Of one true man to earth
And celebrate the birth
Of Washington.

—*Howland.*

8. SELECTION:

Washington's sword was mighty—his pen was mightier. His sword wore out the enemy more often by leading it on fruitless chasings and bewildered flounderings than by pitched battles and decisive combats. But his pen—as I have said on a previous occasion—his pen and those of the group of men around him force us to marvel at the foresight which laid the foundations of a western empire so admirably that unexampled expansion has not rent asunder work cemented with blood, with lives and with sacred honor. You impressionable youths whose brows already glow with the dawn of a new century, compare Washington as he finally sheathed his sword in March, 1784, with the lace-frilled fop, the English George, who in the same month of the same year attained his majority and celebrated it with pomp. Clothes and titles have their glamour; but glamour passes. The quiet, unobtrusive man whose sword was clean and heart also, is already more to the world than all the four Georges together. Our leader did not have a cometic career of splendid wickedness. His was a gray life beside such a one. Yet his told, tells, and will forever tell the value of moderation in all things and devotion to an ideal. In this is a moral for us all. Of his end he said, years in advance, "Whether to-night or twenty years hence makes no difference. I know I am in the hands of a Good Providence." And when the struggles of death were upon him, he said, "Doctor, I die hard, but I am not afraid to die." A lot of nonsense this for those who think life, goodness, all a farce; but sense unutterable and indescribable for those who are busy about the world's duties.

9. SONG: "Marching Through Georgia."



MARCHING THROUGH GEORGIA.

1. Bring the good old bugle, boys, we'll sing another song—
Sing it with the spirit that will move the world along—
Sing it as we used to sing it, fifty thousand strong,
While we were marching through Georgia.

CHO.—Hurrah! hurrah! we bring the jubilee!
Hurrah! hurrah! the flag that makes you free!
So we sang the chorus from Atlanta to the sea,
While we were marching through Georgia.
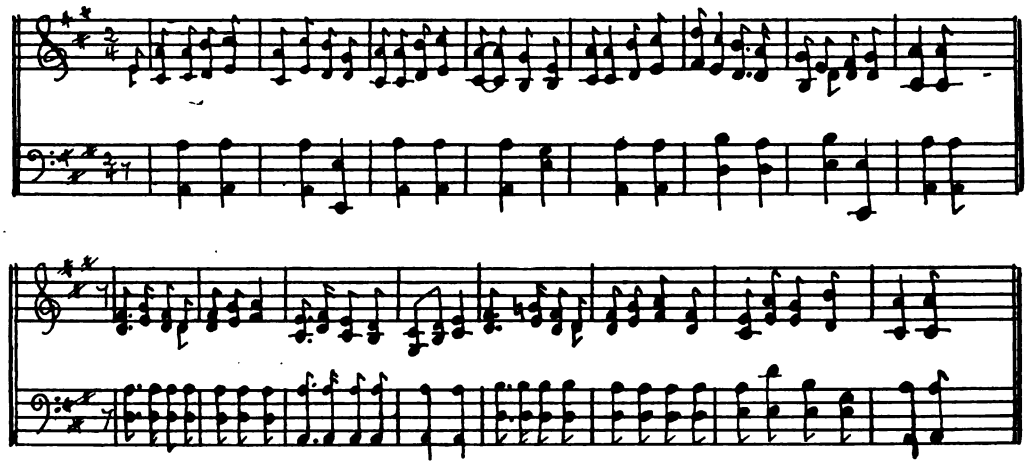
2. How the darkies shouted when they heard the joyful sound!
How the turkeys gobbled, which our commissaries found!

How the sweet potatoes even started from the ground,
While we were marching through Georgia.—*Cho.*

10. SELECTION:

Another charm of his character was that his energy was always well directed. To some of us who are over-enthusiastic and, perhaps, nervously constituted, the awakening to a sense of "individual responsibility to Almighty God," as Daniel Webster expressed it, tends to the attempt to do anything and everything that needs doing. Twenty things around us clamor for attention: There comes in the need for poise of character, preventing us from first an impetuous dash in this direction and then an ignominious retreat in another. "One thing I do," not "twenty things I dabble at." One fire in a noble heart may well serve to heat one iron—too many irons will put the fire out. Surely along such a line of thought Washington was a marvel of self-possession. He was not hasty in his acts and therefore not defeated; he was not swift as a sea-hawk in his decisions and therefore he was never out of sight of those who followed with him; he was not abnormal in his intellect and therefore not erratic; he was not a fierce partisan and therefore not dragged into the unseemly squabbles of his day. The grand old man of England, whose full life ended so gloriously and so recently—Gladstone—has said this of Washington: "I look upon Washington among great and good men, and one peculiarly good and great. He has been to me for more than forty years a light upon the path of life." It means that great hearts are greater than national bounds—that he who lives right, he who lives unselfishly, he whose words speak out grand aspirations belongs not to a nation but to humanity. In which respect Washington has no advantage over the humblest of us who have open hearts for noble impulses.

11. SONG: "Yankee Doodle."



YANKEE DOODLE.

Father and I went down to camp,
Along with Captain Goodwin,
And there we saw the men and boys,
As thick as hasty puddin;

CHORUS—

Yankee doodle keep it up,
Yankee doodle dandy,
Mind the music and the step,
And with the girls be handy.

And there was General Washington,
Upon a snow white charger,
He look'd as big as all out doors,
Some thought he was much larger.

And there they had a copper gun,
Big as a log of maple,
They tied it to a wooden cart,
A load for Father's cattle.

And there I see'd a little keg,
All bound around with leather,
They beat it with two little sticks,
To call the men together.

But I can't tell you half I see'd,
They kept up such a smother,
I took my hat off, made a bow,
And scamper'd home to mother.

12. SELECTION:

If we call Lincoln the emancipator, Washington should be called the great pre-visionary. In 1789 he wrote: "It is among my first wishes to see some plan adopted by which slavery in this country may be abolished." Again in 1797 he wrote: "I wish from my soul that the Legislature of the State could see the policy of a gradual abolition of slavery. It might prevent much future mischief." Alas, the mischief did come, the wine-press of a nation's blood was trodden in righting a wrong, and the abolition came when even those who benefited by it were agonized and dazed by the light of liberty around them. Washington's great dream and comparatively modest bequest was for an anti-sectional national university. This would have brought a better understanding where there should have been no misunderstanding.

13. SONG:

TENTING ON THE OLD CAMP GROUND.

1. We are tenting to-night on the old camp ground,
 Give us a song to cheer
 Our weary hearts, a song of home,
 And friends we love so dear.

CHORUS—
Many are the hearts that are weary to-night,
Wishing for the war to cease,
Many are the hearts looking for the right
To see the dawn of peace.
Tenting to-night, tenting to-night,
Tenting on the old camp ground.
(Repeat last two lines.)

2. We've been tenting to-night on the old camp ground,
 Thinking of days gone by,
 Of the loved ones at home that gave us the hand,
 And the tear that said "Good by."

3. We are tired of war on the old camp ground,
 Many are dead and gone,
 Of the brave and true who've left their homes;
 Others been wounded long.

4. We've been fighting to-day on the old camp ground,
 Many are lying near;
 Some are dead and some are dying,
 Many are in tears.

FOR LAST VERSE.

Dying to-night, dying to-night,
Dying on the old camp ground.

14. SELECTION:

I WOULD TELL.
(Recitation for Five Boys.)

First Boy.—
I would tell of Washington
When he was a boy like me.
He learned his lessons well at school,
And always tried to keep the rule,
And if at work, or if at play,
He did his very best each day;
Was gentle, honest, brave, and true,
And loved by all his comrades, too,
When he was a boy like me.

Second Boy.—
I would tell of Washington
When he was twenty-one—
How he journeyed through the wilderness,
Ofttimes in peril and distress,
Yet never did his stout heart quail,
For he knew no such word as fail;
His dauntless courage, even then,
Showed him a leader among men,
When he was twenty-one.

Third Boy.—
I would tell of Washington
In camp at Valley Forge.
When everything seemed dark and drear,
And hope had given place to fear,
He stood alone unmoved and calm;
His very presence was like balm,
To soothe the suffering, rouse the faint;
He cheered each heart, stilled each complaint,
In camp at Valley Forge.

Fourth Boy.—
I would tell of Washington
After the war was o'er.
By one accord made President,
As toward the capital he went,
The streets were decked with banners gay,
And flowers were scattered in his way;
Gathered about his path, the throng
Proclaimed him chief with shout and song,
After the war was o'er.

Fifth Boy.—
I would tell of Washington
When came life's peaceful close.
Where broad Potomac's waters flowed,
There he took up his last abode;
Respected, honored, loved, revered,
By countless friends his days were cheered,
And when at length, drew near the end,
The nation wept to lose a friend,
So came life's peaceful close.
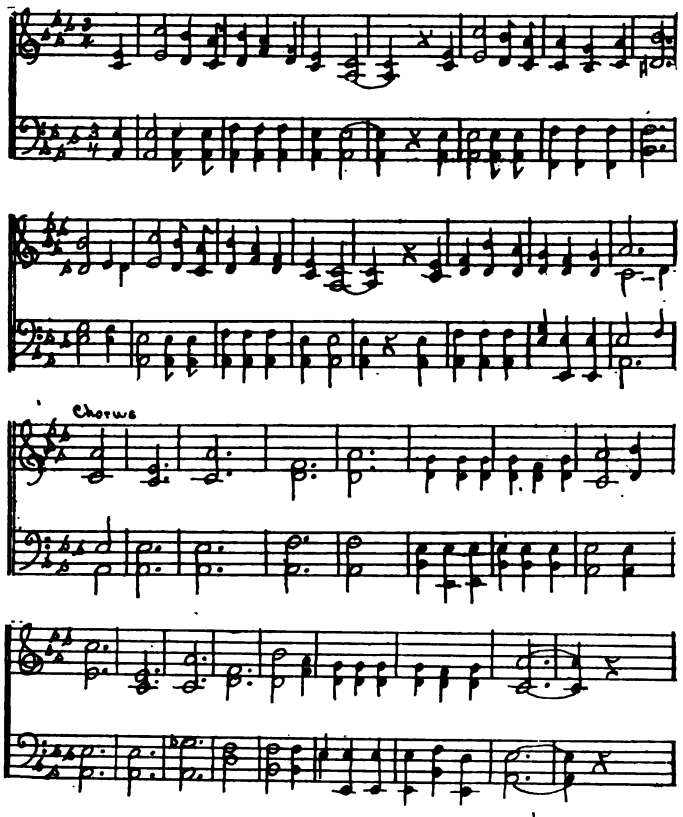
15. SONG: "My Bonnie."

BE LIKE GEORGE WASHINGTON.

(Solo and chorus, Air: "My Bonnie.")

Of maxims my mother has taught me,
Of lessons I now can recall,
Of precepts to which I have listened,
This one I have heard most of all:

To be like, be like,
Be like George Washington, never lie;
To be like, be like,
Be like George Washington, try.



So longing to please my dear parents,
And grow up a great and good man,
One who could ne'er be untruthful,
I hit on this wonderful plan:
To be like, be like,
Be like George Washington; I knew how
To be like, be like,
Be like George Washington now.

I chopped a young tree in the orchard,
And then to my father did cry,
"I felled it with my little hatchet;
Dear father, I can't tell a lie."
I'm like, I'm like,
I'm like George Washington, good and true,
I'm like, I'm like,
I'm like the boy who was true.

Instead of embracing me fondly,
He took off his slipper right there,
And then with such vigor applied it
I felt that I'd never more care
To be like, be like,
Be like George Washington, brave and mild,
To be like, to be like,
Be like that wonderful child.

Dear comrades, this teaches us clearly,
The faults of a good man to shun;
His virtues we ought all to copy,
The victory then may be won.
We'll be like, be like,
Be like George Washington, yes, we will,
Be like, be like,
Be like George Washington still.
—*S. Jennie Smith.*

16. SELECTION:

MEETING OF THE COLORS.

(From Shedd's Special Day Exercises.)

First Pupil.—

Red, from the leaves of the autumn woods,
On our frost-kissed northern hills;
Red, to show that patriot blood
Is beating now in a hurrying flood
In the hearts of American men.

Second Pupil.—

White, from the fields of stainless drift,
On our wide, western plains;
White, to show that, as pure as snow,
We believe the Christ-light yet shall glow
In the souls of American men.

Third Pupil.—

Blue, from the arch of the winter sky,
O'er our fatherland outspread;
Blue, to show that as wide as heaven,
Shall justice to all mankind be given,
At the hands of American men.

All together.—

Red, White, and Blue, and the light of stars,
Through our holy colors shine;
Love, Truth, and Justice, virtues three,
That shall bloom in the land of liberty,
In the homes of American men.

17. SELECTION:

THE GOOD OLD TIMES.

When Washington was president
He saw full many an icicle;
But never on a railroad went,
And never rode a bicycle.

He read by no electric lamp,
Nor heard about the Yellowstone;
He never licked a postage stamp,
And never saw a telephone.

His trousers ended at the knees;
By wire he could not send dispatch;
He filled his lamp with whale-oil grease,
And never had a match to scratch.

But in these days it's come to pass,
All work is with such dashing done—
We've all those things; but, then, alas!
We seem to have no Washington.
—*Burdette.*

18. SONG: "Battle Hymn of the Republic."

19. SELECTION:

"CROWN OUR WASHINGTON."

Arise—'tis the day of our Washington's glory,
The garland uplift for our liberties won;
O sing in your gladness his echoing story,
Whose sword swept for feedom the field of the sun.
Not with gold nor with gems,
But with evergreens vernal,
And the banners of stars that the continent span,
Crown, crown we the chief of the heroes eternal,
Who lifted his sword for the birthright of man!

He gave us a nation; to make it immortal
He laid down for Freedom the sword that he drew;
And his faith leads us on through the uplifting portal
Of the glories of peace and our destinies new.
Not with gold, nor with gems,
But with evergreens vernal,
And the flags that the nations of liberty span,
Crown, crown him the chief of the heroes eternal
Who laid down his sword for the birthright of man.

Lead, Face of the Future, serene in thy beauty,
Till o'er the dead heroes the peace star shall gleam.
Till Right shall be Might in the counsels of duty,
And the service of man be life's glory supreme.
Not with gold, nor with gems,
But with evergreens vernal,
And the flags that the nations in brotherhood span,
Crown, crown we the chief of the heroes eternal,
Whose honor was gained by his service to man.

O Spirit of Liberty, sweet are thy numbers!
The winds to thy banners their tribute shall bring,
While rolls the Potomac where Washington slumbers,
And his natal day comes with the angels of spring.
We follow thy counsels,
O hero eternal,
To highest achievement the school leads the van,
And, crowning thy brow with the evergreen vernal,
We pledge thee our all to the service of man.
—*Hezekiah Butterworth.*

20. SELECTION:

A BOY'S PROTEST.

(A recitation for a small boy holding a pasteboard hatchet.)

Oh dear, what a racket
All about that hatchet!
I wish they would stop all their noise!
Some folks who write papers
Would rub out all capers,
And prosy stuff give to us boys.

It takes all the courage
From boys that are my age
To be told such stories are fibs,
When we have been trying
To keep from all lying
Ever since we were out of bibs.

They would have us receive
All that *they* can believe
As all that is honest and true,
But I know boys to-day
Who do not run away
When mischief they've happened to do.

And I'm still believing
The story's old reading
As the one on which to rely.
And in spite of the clamor
My hero I'll honor
As the boy who *could not tell a lie.*
—*Ruth Davenport.*

21. SONG: "Columbia the Gem of the Ocean."

22. SELECTION:

A ZEALOUS PATRIOT.

If there was a war I'd get my gun
And I'd be like General Washington;
I'd sling it over my shoulder—so—
And forth to the contest I would go.

I'd ride on a stately snow-white horse,
Into the thick of the fight, of course;
I'd keep the hearts of my soldiers true,
For that is the way he used to do.

If there was a war I'd try to be
A brave defender of liberty;
I'd think of the way that Washington
Fought and conquered in days long done.

I'd be so full of a patriot's zeal
The hardships of war I would not feel;
If I died in battle, my wounds should show
I fell on the field fronting the foe.

But, oh! to be good from day to day
Is a harder task than to lead the fray;
Yet I'll do my examples and fetch the wood,
For heroes begin by being good.
—*Selected.*

23. SELECTION:

OUR NATIONAL FLAG.

There is the national flag! He must be cold indeed who can look upon its folds rippling in the breeze without pride of country. If he be in a foreign land the flag is companionship and country itself, with all its endearments. Who, as he sees it, can think of a state merely? Whose eye once fastened upon its radiant trophies, can fail to recognize the image of the whole nation?

It has been called a "floating piece of poetry," and yet I know not if it have any intrinsic beauty beyond other ensigns. Its highest beauty is in what it symbolizes. It is because it represents all, that all gaze at it with delight and reverence. It is a piece of bunting lifted in the air; but it speaks sublimely, and every part has a voice.

Its stripes of alternate red and white proclaim the original union of thirteen states to maintain the Declaration of Independence. Its stars, white, on a field of blue, proclaim that union of states constituting our national constellation, which receives a new star with every new state. The two together signify union, past and present. The very colors have a language which was officially recognized by our fathers. White is for purity, red for valor, blue for justice; and all together—bunting, stripes, stars and colors, blazing in the sky, make the flag of our country, to be cherished by all our hearts, to be upheld by all our hands.—*Charles Sumner.*

24. SONG: "Old Folks at Home."

OLD FOLKS AT HOME.

Way down upon de Swanee ribber,
 Far, far away,
Dere's where my heart is turning ebber,
 Dere's where de old folks stay.
All up and down de whole creation,
 Sadly I roam,
Still longing for de old plantation,
 And for de old folks at home.—*Cho.*

All 'round de little farm I wander'd,
 When I was young,
Den many happy days I squander'd,
 Many de songs I sung.
When I was playing wid my brudder,
 Happy was I;
Oh! take me to my kind old mudder,
 Dere let me live and die.—*Cho.*

One little hut among de bushes—
 One dat I love—
Still sadly to my mem'ry rushes,
 No matter where I rove.
When will I see de bees a-humming
 All 'round de comb?
When will I hear de banjo tumming,
 Down in my good old home!—*Cho.*

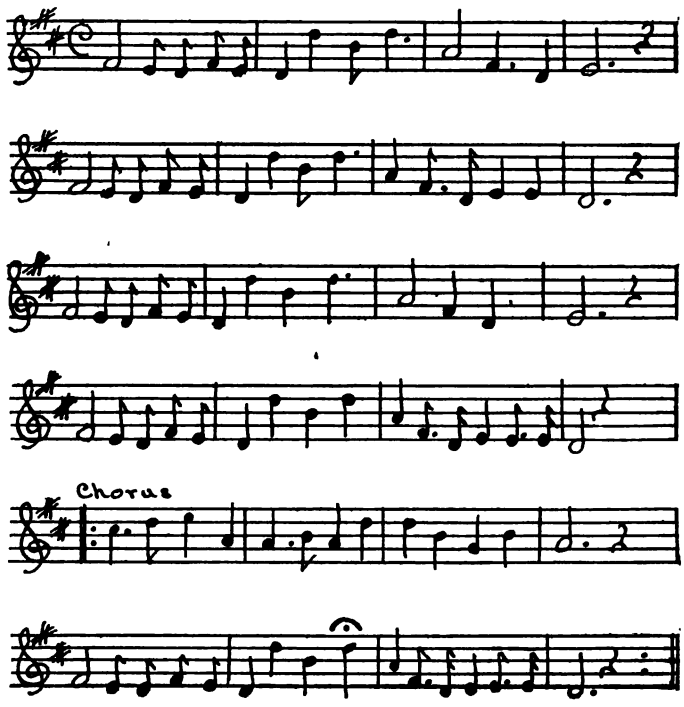
CHO.—All de world am sad and dreary,
 Eb'ry-where I roam;
Oh! darkies, how my heart grows weary,
 Far from de old folks at home.

—*Stephen C. Foster.*

25. SELECTION:

To be born is no unusual human experience, neither is it unusual to die. The value of a life is reckoned solely by what the individual fills into the gap between two commonplaces. There is so short a cry, for some of us, between "the two silences," that life and what we do with it become strangely urgent matters. Washington says: "Idleness is disreputable under any circumstances—productive of no good even when unaccompanied by vicious habits." Like a sane man he partook of his own advice; and the chief impression left by a close study of the man, his thoughts, his acts, his writings, his influence is that his life was a full one—filled with healthy endeavor wherever it pleased providence—in whom he believed most devoutly—to place him.

26. SONG: "The Red, White and Blue."



INDIANA STATE BOARD QUESTIONS FOR JANUARY, WITH DISCUSSIONS.

ARITHMETIC.

1. What is the distinguishing principle in the Arabic notation?

2. Add 63,954
87.445
18,294
51 687
91,582
72 927
51,470
83,044
94,514
12,592
88 416
97,654
92.214
82,405
96,185

3. A man has $4,000 to exchange into German money. The mark is worth $0.238. How many marks will he receive?

4. (a) If one-third of six be three, what is one-fourth of twenty?
(b) If three be one-third of six, what is one-fourth of twenty?

5. At what per cent. simple interest will $500 gain $118.90 in two years, three months and ten days?

6. Two-thirds of the value of a house equals four-fifths the value of a lot; both are worth $4,400. What is each one worth?

7. Resolve the following into their prime factors:
$1 - c^4 = ?$
$a^4 - b^4 = ?$
$x^3 - x = ?$

1. The decimal system.

2. 1078333.

3. $4000.÷.238 gives 16806 marks and $.172 over.

4. ⅓ of 6 is 2. If 2 be 3, 1 is ⅔, and ¼ of 20, or $5 = 5 \times \frac{2}{3}$, or 7½.

If 3 be 2, 1 is ⅔, and $5 = 5 \times \frac{2}{3}$ or 3⅓.

5. $500 at 1 % for the given time gains $11.38⅔. 500÷11.38⅔ gives $10\frac{1}{10}\frac{1}{15}$ as the rate per cent.

6. If ⅜ the house = ⅛ the lot, ⅓ house = ⅛ lot, and ⅝ house = ⅝ lot. If house is ⅝ the lot, together they are $\frac{1}{8}$ the lot. ∴ $\frac{1}{8} = \$4400$, ⅝ or the house = $2000, ⅝ or the lot = $2400.

7. $1 - c^4 = (1 + c^2)(1 + c)(1 - c)$.
$a^4 - b^4 = (a^2 + b^2)(a + c)(a - c)$
$x^3 - x \quad x(x+1)(x-1)$.

HISTORY.

1. Why did Columbus go to Portugal with his plans of discovery?
2. What did Magellan's voyage prove?
3. (a) In what four wars were the English colonists involved with the French? (b) State briefly the results of each as concerned the colonists.
4. Why was the battle of Brandywine fought?
5. (a) What was the attitude of New England toward the war of 1812? (b) Why?
6. Who was Dr. Marcus Whitman? How is he connected with United States history?
7. What was the "Trent Affair" in 1861, and in its settlement what important contention of our government in 1812 was sustained by its action in 1861?

1. Genoa declined aid, and Portugal was then the leading maritime nation.

2. That the earth was round.

3. King William's war, did not affect the territory held by English and French respectively; Queen Anne's war, resulted in the cession of Acadia by France to England; King George's war, in which Louisburg was taken by England but given back, thus leaving no change in boundaries; French and Indian war, in which France lost her possessions east of the Mississippi except two small islands.

4. It was one of the keys to Philadelphia.

5. New England opposed the war, fearing that it would be disastrous to her commerce.

6. He explored the northwest in 1835, and settled what is now Oregon in 1843.

7. In 1861 the British steamer "Trent" was seized and two commissioners, Mason and Slidell, enroute to England as representatives of the Confederacy were captured. This act was seizure on the high seas, and Lincoln promptly disavowed it and gave up the prisoners.

READING.

(Based on general field of reading.)

1. While one member of the class reads, should the others close their books? Why?
2. Which is better for third year pupils: Short selections, or complete masterpieces? Why?
3. What should be the test of literature suitable for third and fourth year pupils to read?
4. How does training in reading tend to develop the mind of the pupil?
5. In school reading is the main purpose the grasp of the thought, or its expression?
6. What is the difference between reading and elocution?
7. In what consists the pupil's preparation of the reading lesson?

1. For the others to close their books and listen would serve as a good test of the effectiveness of the reader. He is to convey the whole content to his hearers, which means that he must first grasp it himself and then have power to transfer it to them.

"It compels the class to think, to follow the reader, to get thought through the ear (a talent becoming rarer every day), and, above all, it stimulates the imagination." P. 118.

2. Short selections, or, better, *short masterpieces*. A masterpiece is not necessarily long. Pupils of this age are hardly capable of carrying all the details of a long selection and holding all their relations in mind until they can see their unity.

3. It should be simple in thought and structure, not too far away from common experience, and along the lines of interest that appeal to children of this grade. Phases of life comprehensible by older persons only are to be mainly avoided.

4. By the stimulation required in interpretiug the poem and by furnishing the mind with fact and fancy. Well-selected reading matter appeals to all the mental powers but especially to the imagination.

5. The emphasis should certainly be placed upon the first.

6. The term reading suggests the inner or thought processes of the act of interpretation while elocution suggests the outer or mechanical means by which this interpretation is expressed.

7. In a study of all the new and difficult words and expressions, and in an earnest endeavor to "put himself in the author's place".

(Based on *How to Teach Reading.*)

1. Will the ability to form the mental pictures as we read assure the right "quantity" and "quality?"
2. What relation does the teacher's appreciation of good literature bear to his ability to teach reading?
3. Should attention to reading increase or decrease as the school course is proceeding? Why?
4. Is the ordinary punctuation of a paragraph a safe guide in "grouping"? Why?
5. What advantages has the "getting-the-thought" method over the punctuational?
6. What principal results might we reasonably expect after a half-dozen years' instruction in reading?
7. What "time" is appropriate to the following, and why?

"City of the West
Built up in a minute,
In a business bustle,
Everybody in it;
On a race with time,
Fast as he can go,
Everybody thinks
Telegraphing slow."

1. Yes. "The tone expressive of elevated feeling 'cannot be mechanically produced, or manufactured independently of the general mental and physical conditions.' The imagination must lead . . ." P. 84.

2. "Appreciation of the meaning and beauty of literature is the first requisite of a successful teacher of reading." P. 10.

3. Since reading is a necessary means in all lines of study it should have greater emphasis in the early portion of the course. The mastery of the reading steps in the earlier years makes succeeding work comparatively simple.

4. No: "grouping is entirely independent of punctuation". "The function of the punctuation mark is to assist the reader in getting the author's thought, while grouping is a more fundamental thing, expressing the succession of ideas. P. 28 *et seq.*

5. The one is vital, real, while the other is mechanical.

6. A love for good literature is established, the student acquires the power to quickly and accurately gather the author's thought, his powers of thought and imagination are strengthened, and he gains the ability to give adequate vocal expression to what he reads.

7. Very fast; such "time" expresses the spirit of "bustle" which "thinks telegraphing slow".

GEOGRAPHY.

1. (*a*) State approximately, in inches, the annual rainfall in Indiana.
(*b*) In what part of the United States is the annual rainfall greatest?
2. How may pupils be led to see that the surface of the earth is curved?
3. Describe fully the Kankakee region of Indiana, setting forth the reasons for its present condition, the condition of the soil, the progress made toward its cultivation, its future outlook, etc.
4. Discuss "The Delta of the Mississippi," dwelling particularly upon its formation.
5. What is a storm? A cyclone? A monsoon?
6. What is the condition of agriculture in the Transvaal? Why?
7. What is a coastal plain? A flood plain? A delta?
8. What nation or nations have control of the Nile River? The Suez Canal?
9. Describe the llanos of South America.
10. What conditions are favorable to the production of rice?
11. What important results are due to the curvature of the earth's surface?

1. (a) It ranges from 35 inches in the north to 45 inches in the south.

(b) On the Pacific coast of Washington and Oregon and on the coast of the Gulf of Mexico.

2. By ascending a tree, hill or building and noticing the enlargement of the horizon. By noticing that the lower part of a distant ship on the sea or a large lake is hidden. In some localities upon the land the lower part of distant objects is hidden by the curve of the earth. By noticing the circular shadow of the earth on the moon during an eclipse. By traveling several hundred miles north or south and noticing the rise of the stars in front and the decline of the stars behind. The same effect may be noticed in traveling over the curve of a hill.

3. The Kankakee region is an area of about 1,000 square miles in northwestern Indiana. It is a nearly level plain, the bed of a former glacial lake, diversified only by low sand ridges and knolls. The slope is so gentle that the natural drainage is very imperfect, and most of the area has been occupied by marshes and shallow lakes. The soil is largely composed of muck or peat, the product of the decay of marsh vegetation. It has been recently drained by artificial ditches, and most of the region is now under cultivation. It produces large crops of corn, wheat and hay, and promises to be especially adapted to the production of onions, celery and sugar beets.

4. The delta of the Mississippi is *not* the branching arms at its mouth, as many maps and books, including Fryes', state. That is known as the "Goosefoot." The delta is that part of the alluvial valley which extends from the mouth of the Red River to the Gulf of Mexico. It is 200 miles long by way of the river, and has a coast line of more than 100 miles. It is nowhere more than a few feet above sea level, and contains numerous lakes, bayous and salt marshes. Many distributaries of the river pass through it. It has been formed by the deposits of silt brought down by the river. When the current is checked by entering still water, the stream drops its load of sediment and builds the land out into the sea.

5. A storm is a rather violent disturbance of the atmosphere. A cyclone is a storm in which the wind blows spirally around a center of low pressure: an atmospheric whirl or eddy. A monsoon is a periodical wind which changes its direction at regular intervals.

6. Agriculture in the Transvaal is not prosperous on account of the dryness of the climate.

7. A coastal plain is a strip of low land along the coast which has been recently elevated above the sea. A flood plain is a strip of lowland along a river which is overflowed at high water. A delta is a deposit of sediment at the mouth of a stream.

8. The Nile river is nominally under the control of the Khedive of Egypt, who is a subject of the Sultan of Turkey. It is really under the control of Great Britain. The Suez canal is controlled by Great Britain.

9. The llanos are treeless plains along the Orinoco river. In the dry season they are almost a desert, but in the rainy season are covered with a luxuriant growth of grass and herbaceous plants.

10. A warm, moist climate, a rich soil and facilities for flooding the fields with water.

11. The distribution of heat is determined by the form of the earth. If its surface were flat all places would receive the sun's rays at the same angle, and consequently the same quantity of heat. On a spheroidal surface only one ray can strike perpendicularly, and all other rays strike at an angle which increases with the distance from the perpendicular ray. If the earth's surface were flat the sun would rise and set at the same moment at all places. Curvature is the cause of difference of time at different places.

LITERATURE.

1. Who is your favorite poet? Why?
2. Main facts in his life?
3. His place in literature?
4. Which do you prefer to read, a novel or a drama? Why?
5. Give the main thought that is explained in some essay you have read.
6. Tell something about the style of the same essay.
7. Give an outline of the story of some play of Shakespeare's.
8. Give the main idea in some poem of Whittier's.
9. Describe some person told about in *The Sketch Book*.
10. Write a paper of not less than 130 words on An Interesting Evening.

This list of questions is of such a nature that it appeals to the individual experience of the applicant. One can not answer a list of questions in history or arithmetic by appealing to his own consciousness. Hence a set of answers to these questions would have little value here except as reflecting the special impressions of the writer. No two sets of answers need agree, except in the display of a reasonably high standard of appreciation.

1. Robert Burns. Because he sees worth in sordid surroundings.

2. See any encyclopædia.

3. "The greatest lyric singer in our language."

4. A drama. Greater vividness of impression results, and one is not obliged to wade through dreary wastes of second-hand explanation and analysis of motives. (But the reading public reads novels, not dramas:)

5. In Emerson's "Compensation" the idea of duality is presented.

6. Short epigrammatic sentences, without logical order, but full of clear, convincing insight.

8. In "The Barefoot Boy" the "unalloyed joys of boyhood" is the subject.

9. Among those who might be described are Ichabod Crane, Brom Bones, Katrina Van Tassel, Rip Van Winkle, the stage driver, Master Simon, the old squire.

10. Such a paper might tell of an old-fashioned spelling school, or husking-bee, or evening at the lecture or opera, or at a teacher's meeting, or a magic-lantern show. Such an exercise forms a good test of one's imaginative powers in reproducing the interesting experiences, and of one's language powers in expressing them so that another may comprehend.

GRAMMAR.

Whilst the authors of all these evils were idly and stupidly gazing on this menacing meteor which blackened their horizon, it suddenly burst, and poured down the whole of its contents upon the plains of the Carnatic.

1. Classify the clauses in the above selection.
2. (a) Name three modifiers of "were gazing."
(b) Name the modifiers of "poured."
3. Classify the connecting words found in the same selection.
4. Give the syntax (case and reason) of (a) authors; (b) meteor; (c) horizon; (d) whole.
5. State what each of the following modifies: (a) all; (b) upon the plains of the Carnatic; (c) whilst.
6. Give the synopsis (first person, singular) of the verb "burst" through the indicative mode.
7. (a) Which of the verbs found in the selection are transitive and which intransitive?
(b) Give the voice of each verb.
8. How may a pupil be stimulated to increase his vocabulary and to improve his power of self-expression.
9. In what respects is drawing valuable in developing facility in the use of language?
10. Write not less than 100 words on *one* of the following topics with a view to its being criticised with respect to its spelling, capitalization, punctuation, grammatical construction, proper use of words, and sentence structure:
(a) How I learned to read.
(b) A comparison of the early settlers of New England with those of Virginia
(c) How a moth differs from a butterfly.

1. "Whilst horizon," an adverbial clause, modifying the word "burst." "Which horizon," an adjective clause, modifying the word, "meteor." "Whilst burst," first member or independent clause; "poured Carnatic," second member or independent clause.

2. (a) The word, "were", is the copula of the first number and has no modifier. The word "gazing", is modified by the following modifiers:

"idly", "stupidly", and "on horizon."

(b) "Down", "the contents" "upon Carnatic."

3. Conjunctive adverb, "Whilst"; relative pronoun, "which"; conjunctions, "and", "and"; prepositions, "of" "on", "of", "upon", "of."

4. (a) Nominative case, subject of the subordinate clause.

(b) Objective case, principal word of the prepositional phrase.

(c) Objective case, direct objective modifier of verb, 'blackened."

(d) Objective case, direct objective modifier of verb, "poured."

5. (a) "evils". (b) "poured". (c) "burst" and "gazing."

6. See *Essentials of English Grammar*, Whitney or any other good text.

7. (a) The participle, "gazing," comes from the transitive verb, "gaze," "blackened," and "poured," are transitive. The verb, "burst," is intransitive; and the pure verb, "were," is neuter.

(b) The verb phrase, "were gazing," is active voice and so are all the verbs.

8. Urge him to use the dictionary in all his work. Whenever in his study or general reading he finds an unfamiliar word have him use his dictionary in mastering the spelling, pronunciation, and meaning of it. Drill him frequently in use of the dictionary and in synonyms.

9. It teaches the child to observe closely and fixes his attention upon the main features of a thing. In drawing he gets an idea of the whole first and then fills in the details just as he must do in writing description.

PHYSIOLOGY AND SCIENTIFIC TEMPERANCE.

1. How are the auditory cells made to vibrate?
2. Give the arrangement of the gray and white matter in each division of the brain.
3. How is heat distributed through the body?
(b) How is it regulated?
4. Describe the skin and state its functions.
5. Describe the structure of the kidneys.
6. Where provision has not been made for the proper ventilation of a schoolroom, what can be done by the teacher to keep the air of the room from becoming vitiated?
7. State and explain the effects of tobacco upon the blood.
8. Describe the effect of alcohol upon the muscles.
9. Name three hereditary effects of the intemperate use of alcoholic liquors.

1. Vibrations of the air are transmitted along the auditory canal to the membrane of the tympanum, thence across the middle ear by the chain of bones, through the oval window to the perilymph of the inner ear, thence in the lymph up the scala vestibuli and down the scala tympani. The vibrations of the lymph in the scala tympani cause vibrations of the basilar membrane, upon which the auditory cells rest, causing them to vibrate.

2. In the cerebreum there is a thin layer of gray matter over a central mass of white matter. In the cerebellum the gray matter surrounds the white, while in the medulla the white matter surrounds the gray matter.

3. Heat is developed in all parts of the body by the chemical processes incident to nutrition. Muscular exercise especially promotes the development of heat. Heat escapes from the body through the lungs and through the skin by radiation and by evaporation of the perspiration. The circulation of the blood tends to equalize the temperature, bringing heat from the inner portions of the body to the surface. In health these processes in some way balance one another.

4. The dermis or true skin consists of a network of elastic and inelastic connective tissue fibers with blood-vessels, lymphatics, sweat glands, oil glands, nerves, tactile corpuscles and touch cells. The epidermis consists of a mass of dead cells cemented together so as to form a protecting layer for the more sensitive parts below. The skin protects us, helps to regulate temperature, and contains the organs of touch, feeling, temperature and pain.

5. The kidneys are bean-shaped glands about four inches long. At a depression on the concave border the renal artery enters, and the renal vein and the ureter leave the kidney. The outer layer or cortex is a dark mass of blood-vessels, capillaries, and uriniferous tubules, long and slender, which secrete the urea from the blood. The inner medullary portion of the kidney is composed largely of conical masses called pyramids of Malpighi, whose apexes open into the pelvis of the kidney, which is the head of the ureter. In these pyramids the tubules end, forming larger ducts, and carrying the secretions which are then poured into the pelvis.

6. Ventilate thoroughly morning, noon and at recess by opening doors and windows. During the session, raise the lower sash of two or three windows about four inches, stop the openings below with boards, and let the fresh air come in at the openings between the sashes. The current will be directed upwards, and there will be little danger of drafts.

7. Tobacco is a powerful drug and probably has some effect upon the blood. It is said to hinder the development of the red corpuscles. It disturbs the action of the heart and tends to reduce the rapidity of the circulation. Concerning the effects of tobacco upon the blood little is known and nothing explained.

8. It reduces control of the voluntary muscles and there is loss of coordinating power. With continued use the muscles become weak possibly

through lack of nourishment. Alcohol disturbs the heart action, and if its use is continued the heart degenerates, becoming fatty and weak. How much these effects are due to the direct action of alcohol no one can tell. They appear to be largely secondary.

9. Whether recently acquired habits or characters are hereditary is still a disputed question among biologists. Some writers claim that the weak body, the weak mind and the depraved appetite of the intemperate man may be transmitted to his children. Others consider such transmission very doubtful.

SCIENCE OF EDUCATION.

NOTE.—In this subject five subjects are based on general pedagogy and five on *Organic Education.*

1. Explain the meaning of the following proposition: "Education is not a preparation for life; it is life."—*John Dewey.*
2. In general, what do you think of the use of certain great typical periods of civilization as furnishing the material for the work of children in the different grades?
3. Upon what theory of the child's development is such selection of material made?
4. Is the view of the child's development upon which this theory of education rests a correct view? Give reasons for your answer.
5. Name several of the leading periods in the history of civilization which are usually chosen for such study
6. "Everything should be done in the order of nature."—*Comenius.* Explain this proposition.
7. "That man, I think has had a liberal education who has been so trained in his youth that his body is the ready servant of his will, and does with ease and pleasure all the work that, as a mechanism, it is capable of; whose intellect is a clear, cold logic-engine, with all its parts of equal strength, and in smooth working order; ready, like a steam engine, to be turned to any kind of work and spin the gossamers as well as forge the anchors of the mind; whose mind is stored with a knowledge of the great and fundamental truths of nature, and of the laws of her operation; one who, no stunted ascetic, is full of life and fire, but whose passions are trained to come to heel by a vigorous will, the servant of a tender conscience; who has learned to love all beauty, whether of nature or art, to hate all vileness, and to respect others as himself."—*Professor Huxley.*
State in your own language the general ideal or conception of education set forth in this paragraph.
8. What elements of training and culture does it include?
9. As a definition of education is it defective? Give reasons for your answer.
10. What do you consider the principal defects of the educational systems of ancient China, Egypt and other Oriental nations?

1. Education is a life process. School-education is only a part of this process. The best education comes from living all one can live from day to day.

2. It is undoubtedly true that civilization is marked by certain great periods typical of its development. The products of these periods remain as objectifications of the life of the times and may very reasonably serve as material or means of the child's development in the different grades.

3. That the life of the child is an epitome of the life of the race.

4. In the main, yes. The parallel between the development of the child and that of the race is easily seen in the matter of gaining knowledge of the laws of life, in appreciation of beauty, and in self-control.

5. The Orient, the Grecian, the Roman, the Anglo-Saxon.

6. Nature develops in order taking into consideration the capacity of the thing to be developed and the conditions present. Applying this principal to the education of the child, his capacity and conditions should dictate the process.

7. This paragraph seems to call for full, symmetrical development of all the powers of man in education.

8. It includes the training of the body; it includes the full swing of knowing; it provides for the æsthetic; it takes into account the necessity of will development to self-direction.

9. It seems to emphasize strongly the essential elements of character and neglects neither body nor spirit. Education is nothing more nor less than this.

10. The positive suppression of individuality is the chief defect and all others grow out of this.

AMONG THE NEW BOOKS.

It would be difficult to find a city in the United States whose history abounds more in picturesque incident than the city of New York. Cosmopolitan as it now is the various steps, or bounds rather, by which it has become so from an Indian village, a Dutch trading post, and a provincial town furnish rich material for historian and story-teller. Mr. Charles B. Todd, in *A Brief History of New York*, has caught a good many of the interesting events and has made them into an entertaining and instructive narrative that reaches from the Dutch dynasties to Greater New York. Dutch manners and customs, early landmarks and the way they disappear, New York in the Revolution, New York as the national capital, Hamilton, Burr, Fulton, the Vanderbilts, the Astors, the old Broadway stages—all these are some of the features that give color and tone to the sketch. [American Book Co., 299 pages, illustrated, 75 cents.]

The announcement that Professor John M. Coulter has completed his Second Book of Botany will be of great interest to any who are at all acquainted with the first book. *Plant Structures*, the title, serves to distinguish the scope of this volume from that of the first, which was *Plant Relations*. The two form a natural series, and it is the author's thought that the broader, more general study of botany should precede the intensive laboratory study. And yet, the books are sufficiently independent to allow of the use of either without the use of the other; or, if

both are used, to commence with either the first or the second. *Plant Structures* goes well into the subject of botanical morphology, aiming to be at the same time popular and scientific. Twelve of the seventeen chapters present "The general story of the evolution of plants from the lowest to the highest." Then the additional chapters take up the flower, the angiosperms, physiology and ecology. Too much cannot be said in praise of the illustrations, which were entirely in charge of Dr. Otis W. Caldwell, and many of which were prepared by him. They are abundant, remarkably clear, and show essentials in each case. [D. Appleton & Co., 358 pages, $1.20.]

To say that *The Baldwin Primer* is "a thing of beauty" is no exaggeration. Rich half-tones and colored illustrations of birds, animals, flowers and so forth must prove delightful to the child. It is this sense of beauty that first impresses one who takes up the book. Closer examination shows that the lessons are based upon sound educational principles. Letters, sounds and words are taught together. Script is introduced on the first pages. Many of the selections are bits of classics, and the child's interest must be continuous by the introduction of stories and sketches beyond him to be read by the teacher. [American Book Co., 128 pages, 30 cents.]

REVISED RULES RELATIVE TO LIFE STATE AND PROFESSIONAL EXAMINATIONS.

I. *For Graduates of Higher Institutions of Learning Only.*

All graduates of higher institutions of learning in Indiana, or other institutions of equal rank in other states approved by the state board of education, which require graduation from commissioned high schools, or their equivalent, as a condition of entrance, which maintain standard courses of study of at least four years, and whose work, as to scope and quality, is approved by this board, shall, on complying with the conditions enumerated below, be entitled to life state licenses to teach in Indiana: *Provided, however*, That graduation by the applicant shall have been accomplished by not less than three years' resident study and by thorough, extended examinations in all subjects pursued privately and for which credit has been given by the institution: *And, provided further*, That the requirement as to three years' resident study shall apply only to applicants graduating after this date, January 18, 1900.

1. Such applicants must have held one or more sixty months' licenses.

2. They must present to the state board of education satisfactory written testimonials from competent superintendents, special supervisors, teachers, or other school officials to the effect that they have taught and managed a school or schools successfully for a period of not less than thirty months, at least ten of which shall have been in Indiana.

3. They must pass thorough, satisfactory examinations in any three of the following subjects: (1) General History of Education; (2) The School System and the School Law of Indiana; (3) Educational Psychology; (4) Experimental Psychology and Child Study; (5) Leading School Systems of Europe and America; (6) Science of Education, and (7) The Principles and Methods of Instruction.

4. Before entering upon the examination, such applicants shall present to the state board of education satisfactory evidence of good moral character, and shall pay five dollars each (the fee prescribed by law), which can in no case be refunded. Examinations in the subjects named above may be taken in either March or April.

5. A license will be granted to those who make a general average of 75 per cent., not falling below 65 per cent. in any subject.

II. For Applicants, not Graduates of Higher Institutions of Learning. Examinations of applicants for life state and professional licenses will be conducted in the months of March and April.

1. Subjects for March: Algebra, civil government, American literature, science of education, and *two* of the following *three* subjects—Elements of physics, elements of botany, and Latin (Latin grammar, two books of Cæsar and two of Virgil). A satisfactory examination on the above entitles the applicant to a professional license, valid in any Indiana school for eight years.

2. Subjects for April: Geometry, rhetoric, general history, English literature, physical geography, and *two* of the following *three* subjects—Chemistry, Geology and Zoölogy. A satisfactory examination on both 1 and 2 entitles the applicant to a life state license.

Applicants for life state and professional licenses must have held two thirty-six months' licenses in Indiana, or an equivalent in another state, obtained by *actual examination*, and must have taught successfully at least forty-eight months, which fact shall be properly certified to and sent with the manuscripts to the state board of education.

Before entering upon the examination, appli-

cants shall present to the examiner satisfactory evidence of good moral character and professional ability. Applicants for life state license shall pay five dollars each (the fee prescribed by law), which can, in no case, be refunded.

Applicants for professional license will take March examination only.

No fee is required of applicants for professional license.

A license will be granted to those who make a general average of *seventy-five per cent.*, not falling below *sixty per cent.* in any subject, and who present satisfactory evidence of professional ability and good moral character.

An applicant for a *life state license* who shall fail in the examination for the same, but who has met all the requirements of a *professional license*, shall receive such license, or if he reach the required average for a professional license, but fall below the standard per cent. in one subject, he may be conditioned in such subject, and may be granted a professional license, on the same conditions as if he had originally applied for a license of this class.

An applicant is "conditioned," that is, he may complete the work at the next regular examination, if he make the required general average and pass successfully upon all the branches *except one*, required for the license applied for. A statement setting forth this fact will be furnished such "conditioned" applicant, who must present it to the county superintendent, who will forward it with the manuscript to this department.

III. Where the Examinations May be Taken.

(*a*) Applicants for a professional license are examined by the county superintendents on the last Saturday of March. The papers are to be graded by the state board of education.

(*b*) Applicants for a life state license may be examined by members of the state board of education at any one of the following places on the last Saturday of April:

In the Department of Public Instruction, State House, in the office of the city superintendent of schools in Fort Wayne, Evansville, Valparaiso, Richmond, Terre Haute, Lafayette, Seymour, or in the office of the county superintendent at Bloomington.

FRANK L. JONES,
State Superintendent.

EDUCATIONAL, LITERARY AND GENERAL ITEMS.

The Superintendents' Department of the N. E. A. will be held in Chicago, February 27, 28 and March 1, at the Auditorium hotel. The railroads offer tickets at one and one-third fares for the round trip, certificate plan. The program is a very attractive one.

The appointment is announced of Miss Elizabeth Harrison as head of the kindergarten department in the Chicago normal school.

President L. M. Sniff wishes to announce that all persons desiring COLLEGE WORK may have it at the Tri-State Normal College at all times of the year.

Early in the spring Mr. J. B. Royce will take a position with the Census Bureau. Mr. Royce has been a very efficient agent for the INLAND EDUCATOR in Ripley county.

Mr. Orville Apple, I. S. N. S. class of '89, for many years superintendent of Orange county, Ind., has accepted a responsible position in the census office at Washington.

E. B. Graham of Butler college has been elected to teach Latin and German in the Greenwood high school. Mr. Graham is a member of the senior class this year at Butler.

Dr. Barton W. Evermann has just published descriptions of three new genera and twenty new species of fishes from Puerto Rico. This number is about 10% of the known fish fauna of the island.

The general report upon the expedition of the *Fish Hawk* to Puerto Rico last winter will be published soon and will contain much valuable information concerning the geography and natural history of that island.

The chair of pedagogy at the university of Illinois, left vacant by the election of professor Arnold Tompkins as president of the state normal at Bloomington, is filled by the appointment of Dr. E. G. Dexter of Greeley, Colorado.

The inauguration of Dr. Kane the new president of Wabash college is set for February 22. The school is reported as feeling already the impulse of its new president, and the opinion is expressed that he is the right man in the right place.

Miss Alice Ward of Indianapolis, formerly a teacher in Vories's Business college, but for the past year or more a teacher in the Montpelier schools, was married January 1 to Harry Hathaway of the latter place. THE EDUCATOR extends best wishes.

Fred M. Chamberlain, a graduate of the state normal, and for several years assistant naturalist on the U. S. fish commission steamer *Albatross*, is spending the winter at Balls Ferry, in northern California, carrying on certain investigations concerning the salmon of the Sacramento river.

Miss Mabel Bonsall, a graduate of the state normal, and a member of the senior class of Indiana university, has been elected to the position of teacher of Latin in the high school of Alexandria. Miss Bonsall made a good record while a student in the Edinburg schools.

The U. S. board on geographic names has ruled that the name of our new West Indian possession shall be spelled Puerto Rico, not Porto Rico. "Puerto Rico" is correct Spanish for "rich port", while "Porto" is a poor Portuguese word for "port". So hereafter, spell it "Puerto Rico".

The Richmond schools have put in a department of manual training. Professor W. S. Hiser, who has studied the sloyd work in some of the best eastern schools, is in charge. Superintendent Mott keeps informed as to educational progress, and THE EDUCATOR predicts a bright future for the schools under his charge.

The vacancy in the large normal school at Ypsilanti, Mich., has been filled by Dr. Albert Leonard, dean of Syracuse university. In addition to the principalship at Ypsilanti he will be also the official head of the two other normal schools of the state. This plan of unification will be watched with much interest.

New York is making a desperate effort to unify her state schools. There is no doubt that the system as it has existed, partly controlled by the department of education and partly by the board of regents needs unification. The great thing to be avoided in building a new system is to build as far as possible away from politics.

Mr. Cloudsley Rutter, a state normal man, class '88, now on the U. S. fish commission and stationed at San Francisco, has been visiting his parents at Oakland City, Ind. Mr. Rutter, since leaving the state normal, has graduated at Doane college and at Stanford university, having taken his master's degree at the latter institution.

THE EDUCATOR extends its wishes of long life and happiness to Professor and Mrs. Ulysses Howe Smith recently married. Professor Smith, now assistant registrar of Indiana university, was for a number of years a successful teacher in the public schools of Indiana. The bride has also been a teacher in the state, though a graduate of Oxford, Ohio.

It is a pleasure to announce that *The Atlantic Monthly* reports for last year the largest growth in public interest it has ever enjoyed. Its subscription list is the largest on its record, and with W. J. Stillman, Walter H. Page, John Fiske, Woodrow Wilson, Kate Douglas Wiggin and John Muir on its list of contributors it is safe to predict continuous growth.

It is likely that many readers of the peerless *Youth's Companion* have read the paper year after year without knowing or even stopping to think who was its editor. Few readers have known that the name of Perry Mason & Co. was wholly fictitious, and that the paper has been published and edited for forty years by Daniel Sharp Ford who died December 24.

The Kentucky Educational Association, which met in Louisville December 27-29, was the largest and most enthusiastic meeting held in years. The enrollment was fifty more than double that of last year. The banner, which is given to the city showing the greatest aggregate of miles traveled, was proudly borne off by the teachers of Ashland, Ky., their mileage being 6,000.

Messrs. Houghton, Mifflin & Co. write us that a mistake was made in their copy for advertising in the January EDUCATOR. "A Day's Pleasure" should be made to read "Doorstep Acquaintance." The announcement as corrected would be: Number 139 of the Riverside Series, Howell's *Doorstep Acquaintance and Other Sketches*. With introduction and notes, paper. 15 cents, net.

Chicago is considering the advisability of making her own text-books. Superintendent Andrews thinks it can be done at a saving to the children, and some of the members of the school board place the profit to the publishers under the present system as high as 40 or 50 per cent. Let them remember the old adage to make haste slowly. California tried going into the book business and is now every day repenting of her sin.

The normal school idea continues to grow. Governor Shaw of Iowa in his last message to the general assembly of that state recommends the establishment of four additional schools for the training of teachers. These, with the state normal already established at Cedar Falls, would make five of these schools for Iowa. The Governor reports a full treasury and asks liberal appropriations for educational support. His plan includes better preparation for teachers in the rural schools.

"Some Earlham Alumni in Journalism" is the title of an interesting article by President J. J. Mills in the January *Earlhamite*. Among the distinguished names are those of R. U. Johnson, associate editor of *The Century*, Jacob Piatt Dunn of the *Indianapolis Sentinel*, and Benjamin F. True-

blood, who edits *The Advocate of Peace*. There are at least seven others named as having gained distinction in journalism, making altogether a record of which Earlham may well feel proud.

The state association of Illinois teachers put itself on record favoring the adoption of the national educational association resolution providing for the simplification of the spelling of certain words, and adopted a resolution asking the national association to set aside $1,000 a year for five years to promote the cause of simplification in the spelling of English. It also expressed itself as approving of Dr. E. B. Andrews in his position regarding the right of a superintendent to appoint teachers.

The first number of the Macmillan Company's new magazine, *The International Monthly*, gives evidence of its substantial character. The essays are at the same time scholarly and simple. It is the expressed purpose of the editor and his associates to furnish a journal which shall combine the best features of the more serious English monthly and quarterly reviews, and shall also revert to the standard once set in America by the scholarly quarterly. It aims to present contemporary thought in a permanent, dignified, yet practically available form.

The piece of work which Superintendent F. L. Jones sends to Paris as an exhibit of the state department of public instruction is a very creditable one. It may be described as a large album of thirty-eight pages, eleven by fifteen inches in size, bound in full morocco and trimmed in gold. The album contains an outline of the Indiana school system in detail, of the various teachers' organizations, and of the reading circles. Then there are descriptions of the higher educational institutions and of a few of the modern secondary and primary school buildings. There are numerous fine photographs.

A recent copy of the Kokomo *News* states that for the first time in years all of the one hundred and sixteen schools of Howard county have been visited during a single term by the county superintendent. This speaks well for Superintendent Robey and indicates a purpose to keep the Howard county schools growing. Mr. Robey has the true professional spirit, and this close contact with his teachers means progress for the schools. Among other things arranged for, Mr. Robey will receive and place on file in his office a letter and a composition from each pupil of the sixth, seventh and eighth grades of every district in the county.

The Marion Normal College closed the first winter term January 11. The attendance was large, far exceeding the corresponding term of last year. The brick work on the new building has been completed, and the contractors promise everything in readiness for the spring term which opens March 27. The new building is 155 feet long, 55 feet wide and four stories high. It contains among many other things, a fine science room, and the largest business hall in the state. The architecture is modern; it is lighted by electricity, and the sanitary arrangements are all that could be desired. This, with the splendid structure erected five years ago, gives the institution one of the most complete outfits in the state.

Superintendent C. F. McIntosh, of Spencer, is a candidate for the nomination of the office of State Superintendent subject to the decision of the coming convention of the Democratic party. No other name has been mentioned so far, and Mr. McIntosh bids fair to be the nominee of this party. THE EDUCATOR is interested in having a good man nominated by each party because this insures a good man for the place. Mr. McIntosh is certainly well equipped for the position. He is a graduate of the State Normal School, Class of '92, and since then has been engaged in public school work as teacher, and as superintendent of schools. He is now serving his third term as superintendent of the schools of Owen county. He is well known over the state, is recognized as one of the progressive county superintendents, and has held a number of offices in the school organizations of the state.

The eightieth anniversary of the foundation of Indiana University was celebrated January 19th. Governor Mount was present, and acted as chairman of the day. The leading address was by Mrs. May Wright Sewall, who spoke on "Privilege and Responsibility." Mr. Benj. F. Long, of the junior class, represented the students in an address entitled "The University and Student Life." The Hon. J. E. McCullough, of Indianapolis, representing the alumni, followed with an address on the "Relation of the University to the State." Professor J. A. Woodburn of the chair of history, spoke on the "University and the State." Hon. Charles L. Henry of Anderson represented the trustees in an address on the "Advantages of State Support of Higher Education." Music was furnished by the college band and college glee club. On the evening of January 18th, under the direction of Professor Martin Wright Sampson, of the chair of English, the students gave *As You Like It* in a very attractive manner.

The resignation of D. K. Goss as superintendent of the Indianapolis schools is announced, to take place at the end of this school year. One member of the Indianapolis school board is reported as saying that no Indiana man will be considered for the place. Regarding such a report President Swain of Indiana University surely expresses current sentiment when he says: "I refuse to believe that this member of the board speaks for the entire board. There is one rule that should be applied to the selection of persons for all educational positions by school boards—the best man or woman that a given place demands should be employed. The typical superintendent of schools in Indiana is a man that will, first of all, do everything in his power to use the material obtainable to make the system of schools under his supervision the best possible. He does not permit his friendship for any institution to lead him to employ inferior teachers. He does his duty as he should, first of all, to the schools he is employed to serve. If a better man can be found outside of the state than inside, that will accept the position in Indianapolis, well and good; but, if all the able educators of Indiana are to be rejected on the theory that they can not be trusted to do their duty, a great injustice will be done the teaching profession in this state. I cannot believe that the school board of Indianapolis will make this mistake."

ANNOUNCEMENT REGARDING SPRING TERM OF THE STATE NORMAL.

The following circular letter has been sent by the State Normal School to all the county superintendents in the state:

INDIANA STATE NORMAL SCHOOL,
TERRE HAUTE, INDIANA.

MY DEAR SIR: For the past several years the State Normal School has found it necessary, owing to the very large number of students, to limit the attendance in the spring term to certain classes of students only. We have admitted without examination only college and university graduates, graduates of commissioned high schools, and persons holding the three years' or two years' county license. Many county superintendents and others have regretted strongly the necessity for a rule that excluded from the school in the spring term persons holding the one year county license. It has been pointed out that probably nearly forty per cent. of the fifteen thousand teachers of the state are teaching on the one year license. Statistics recently collected by me show that this is a fact. It therefore seems a matter of great injustice that the only professional school in the state, supported by the state for the training of public school teachers, should close its doors against this large class of teachers at the only term in the year when they can attend.

Two years ago the school decided to establish a summer term which should follow the regular school year. The very large attendance upon the summer term (618 in the summer of '98 and 663 in the summer of '99) has somewhat relieved the pressure in the regular spring term. For this reason it has been decided that hereafter the school will admit without examination in the spring term the following classes of students: College and university graduates, graduates of commissioned high schools, persons holding the life state or professional license, and persons holding one or more three years', two years' or one year county licenses.

A circular setting forth the conditions of admission for each of the terms of the current year will shortly be mailed to your address.

Very truly yours,
WM. W. PARSONS, President.

THE ARYANS.

Editor of The Inland Educator.

DEAR SIR:—In reply to your correspondent, Mr. George Branson, in the January number of THE EDUCATOR who says under the heading "Whence came the Aryans," that the State Board of Education, the *Outline of Method in History* and the *Ten Boys* are promulgating the false notion of the Asiatic origin of the Aryan race, I wish to say that very eminent authorities yet maintain the Asiatic origin of the Aryan, though other eminent authorities do locate it in other places; as, South Eastern Europe, North Western Europe, Northern Africa and so forth. But whatever may be the truth about the origin of the race as to place and time all are agreed that the earliest historical development of the race, of any great proportion, of which we have any account, was in the Indus valley, and that afterwards another division of the Aryan people developed a civilization in Persia. After this another branch developed in Greece, another afterwards in Rome, and another afterwards in western Europe. Now, while it is not certain just what direction these several divisions traveled, in each case, there can be no doubt if eminent authorities are to be relied upon, that the general direction was westward. These two points, first, to track out the Aryan race in its several historic homes in the order in

which they arose, and second, to show that the general movement was a westerly one are the essential ideas advocated by the course of study now being developed throughout our state.

Yours truly,

ELLWOOD W. KEMP.

PRIZE ESSAYS.

The Indiana Society of the Sons of the Revolution offers two medals of the value of twenty-five, and ten dollars respectively, to the two students in the commissioned high schools of the state who shall write the best essays on subjects connected with the War of Independence. The essays must contain from 1,500 to 2,000 words, and must be finished not later than May 1, 1900. For further particulars address William Allen Wood, Indianapolis, who is secretary of the society.

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THE PUBLISHERS.

THE INLAND EDUCATOR.

A JOURNAL FOR THE PROGRESSIVE TEACHER.

WALTER W. STORMS, Editor.

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Associate Editors:
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Chas. M. Curry

Departments: Primary, Flora J. Cooke
Mathematics, Robert J. Aley
Music, J. G. Crabbe

MARCH, 1900.

EDITORIAL
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VOL. X. MARCH, 1900. No. 2.

Educational Creeds. In continuation of the series begun last month by Professor Howard Sandison our readers have this month the main points for which Mr. Edward Bok contends in an article that appeared in the January number of the *Ladies' Home Journal.* Mr. Bok does not profess to be a schoolman, but, as a very successful journalist, his opinion of what might reasonably and safely be expected of a child at school has been widely read and freely discussed. It is in accordance with the plan for this series that the views of both schoolmen and others be presented, and it is a pleasure to offer our readers these views of Mr. Bok together with his portrait.

* * *

Score one for the New Spelling. It is well known that the most important action in favor of the spelling reform is the one taken by the N. E. A., deciding to use a revised spelling in all its official documents and reports. Several of the leading educational papers have adopted the revision; and the University of Chicago recently decided to use the same forms in all its official publications. The action affects the spelling of these twelve words:—program, tho, altho, thoro, thorofare, thru, thruout, catalog, prolog, decalog, demagog, pedagog. THE EDUCATOR prefers the old forms, but predicts that the revision will be general within the next five years. The saving is too manifest to be ignored.

* * *

What Does This Signify? Last year when New York found her facilities for children in the lower grades far below what was required it was arranged that half the children of certain districts should attend in the forenoon and the other half in the afternoon. This was not entirely new, but it was at least surprising to find that the children thrived just as well, intellectually, upon a half as upon a whole day of school. The discovery was almost or quite an accident. But just now Principal F. D. Boynton of the Ithaca (N. Y.) high school is attempting to show that a single hour per day for little children is as good as five. Mrs. Sara D. Jenkins who has charge of the class declares that the experiment is a success, though she has tried it under the most favorable conditions, with small classes of twelve pupils each. The immediate benefits that would follow the general adoption of greatly shortened hours for little children can hardly be estimated. Among them we should have to count, a large saving in money, more time for personal attention by the teacher, reduced danger to health from crowding and bad ventilation, reduced danger of crushing out the child's spontaneity by long-imposed restraints, the larger opportunities for parents, since the child would be at home more of the time, and a total disappearance of the nervous strain imposed upon the teacher by requiring her to hold in check a room full of tired and restless children. Can it be that we have been so prodigal of strength and time?

* * *

"Transition from School to College." Under this caption Professor L. B. R. Briggs, writing in the March *Atlantic Monthly* makes some suggestions that are teeming with interest to every high school and college preparatory teacher, for every parent who has boys fitting for college, and even for every young man about to become a freshman. The author of the article speaks in a vigorous and straightforward way of the dangers and the temptations and the difficulties that are almost sure to beset the student; and, happily, he points out safeguards. "What is his training good for if it has not taught him the folly, the misery, and the wrong of dabbling in evil? Misleading as the predominance of athletics in an institution of learning may be, the fact remains that in athletics lies a saving power, and that for many a boy no better bridge of the gap

between school and college has yet been found than the bridge offered by athletics. . . . Football supplies what President Eliot calls 'a new and effective motive for resisting all sins which weaken and corrupt the body,' it appeals to ambition and to self-restraint. . . . One way to deal with these strange, excited, inexperienced, and intensely human things called Freshmen is to let them flounder till they drown or swim; and this way has been advocated by men who have no boys of their own. It is delightfully simple, if we can only shut eye and ear and heart and conscience; and it has a kind of plausibility in the examples of men who through rough usage have achieved strong character. 'The objection,' as the master of a great school said the other day, 'is the waste; and,' he added, 'it is such an awful thing to waste human life!'"

* * *

The N. E. A. Will Go to Charleston The committee appointed to select a place of meeting for the National Educational Association has selected Charleston. It is understood that Boston, Atlantic City, and Montreal were candidates for the favor. But the South was most cordial in its invitation, as the South is wont to be, and urged the selection of Charleston on the ground that the visit of ten thousand teachers would be an inspiration and a help to education in the South. Charleston claims that she has ample facilities to entertain the convention, and there is no doubt that visitors will learn something of southern hospitality. July 7–13 is the date.

* * *

Superintendents Meet in Chicago. There is no school convention held during the year from which better results may be expected than from the spring meeting of the N. E. A. The fact that there is much more concentration here than at the general convention in July increases the importance of the Superintendents' organization. On another page in this issue will be found mention of some of the good things enjoyed by those in attendance at the meeting just held.

* * *

Ruskin and Blackmore. Late in January England, and indeed the whole world, lost two eminent men—John Ruskin the art critic, and Richard D. Blackmore the novelist. The man who gives the world even one great book, a book that is a perennial source of pleasure, deserves to be gratefully remembered. Such a service was rendered by the author of *Lorna Doone* and the world to-day would agree that his fame rests secure upon that story. Ruskin's fame is of a different kind. Indeed there is little reason for associating their names beyond the fact that as two great Englishmen, each a master in his own field, their lives closed at about the same time. Of Ruskin *The Dial* says "There is no Englishman of his intellectual and moral stature left alive; his peers have all gone before him, and now the last of the great spirits who have shaped for our Victorian age its ethical and æsthetical ideals has been gathered to his rest." This is high praise for one whose judgments were often wrong, whose methods of reform were impracticable, and whose estimate of the work of others was often over-exaggerated. But happily there was in his life so much that was sane, and in his art so much that was beautiful, that even his detractors can scarcely minimize his influence for good. It was an inestimable service even to set the world to thinking seriously about art. This, Ruskin did. During a long and an active life he kept giving to a delighted public thoughts and principles in which beauty and truth were his standing texts. He was a teacher both of art and of ethics, and such a master of English that his influence was great in both provinces. Now that his work is ended one hardly knows if it was his gospel of beauty in art, or his high view of conduct and life, or his charming literary style, or the splendid life of the man himself that pleases most.

* * *

Our Kind Detractors. If there should seem to be a tinge of irony in speaking of our detractors as "kind" let the suspicion be dismissed at once. There is no disposition to indulge any such spirit. On the contrary the frequent recurrence of sharp criticisms against the schools that have appeared of late is a sure indication of growing interest on the part of the community. So far as the criticism is intelligent and not wholly destructive it ought to be welcome to teachers. Anybody, in any occupation, is likely either to resent or ignore mere fault finding; but the earnest teacher, conscious of the weak points both in his own work and in the system at large, will always be willing to hear suggestions for improvement. It ought to help us to know how others see us. And yet, there is great need for the exercise of careful judgment in estimating the value of criticism, however friendly and kind. For just as the teacher is in danger of

bias regarding his own work, so the layman is quite likely to take a one-sided view of the things he would fain reform. It seems to THE EDUCATOR that the one thing to be most desired is intelligent and mutual sympathy—one born of knowledge. Parents and friends must remember that the system at best is exceedingly complex, that a complex civilization makes it so. They must remember, too, that it has grown rapidly, and that a good deal of experimenting has been inevitable. Parents and friends should be present at teachers' meetings to see how earnestly the teachers are seeking the best things. If possible, parents should read at least one good educational journal. Then there should be occasional joint meetings where all who are interested in schools and education, either directly or indirectly, might consider and discuss the various educational problems from various points of view. In a community where these close relations existed one can hardly imagine such a thing as caustic or hostile criticism.

* * *

An Interesting Experiment. *The Topeka Capital* is a representative Kansas paper, well edited and financially successful. For the week beginning March 13 the entire control of the paper and its policy, its news and its business will be turned over without reserve to Rev. Charles M. Sheldon, to be run as he thinks Jesus would run it. Mr. Sheldon will be remembered as the author of the well known book *In His Steps*. Those who know him in his personal life say that it accords with his teaching. The experiment will be studied with much interest. Mr. Sheldon gives his time and his work, and the proprietor gives the free use of his establishment. All income, above running expenses, will be given to worthy institutions. The week's subscription price is twenty-five cents.

* * *

Richard W. Thompson. Peacefully and naturally, the life that was fully rounded out came to a close early in February. Born in 1809, the year that gave the world Holmes, Tennyson, Darwin, Mrs. Browning, Lincoln and many other notables, the life of Colonel Thompson almost spanned the greatest of the centuries. He was a worthy contemporary of other worthies. Coming early, as he did, into public life, his experience with the great men of the century was remarkable. Sooner or later he became personally acquainted with nearly all of them. At the age of sixteen he looked with wondering eyes upon the author of the Declaration of Independence, who was making some purchases at a village store, and whose gentle and benevolent expression made an impression upon the lad that was both deep and lasting. The figures of Madison and Monroe were familiar to the boy, and he went with his father to Washington to see Andrew Jackson inaugurated. Colonel Thompson was a member of Congress with John Quincy Adams, and was of course acquainted with all the presidents from the beginning of his public life up to the present. Last Fall, when President McKinley stopped in Terre Haute it was Colonel Thompson, over ninety years old, whose voice, even then silvery and clear, we heard introducing him. But perhaps the most interesting of these reminiscences were those which pertain to Lincoln. During the war Thompson knew the president well, and was often called to the white house to advise with him. It was a rare pleasure to spend an evening with Colonel Thompson in his fine old library, where, during the calm closing years of his life he loved to meet the younger folks and talk to them out of his rich store of experiences. Kindly and genial, everybody here knew him as "Uncle Dick." Indiana knew him as her "Grand Old Man." The whole nation is poorer for his going, but happily richer for his having lived. Loyal to his party he never lost the esteem and confidence of those who opposed him. His life was clean and exemplary. It is worth holding up as a model for the young, and it will long be an inspiration to all who may know it.

* * *

Education and Business. When one of the younger men becomes president of a great university the traditions of which have been sacredly guarded and held by the college fathers there is naturally a good deal of interest in all his public utterances. At least it has been so with the new president of Yale, Arthur T. Hadley. It is not the purpose of this paragraph to eulogize President Hadley, but it is fair to say that his views of present-day education are at least modern. He sees clearly that higher education is no longer in any sense peculiarly appropriate for professional people only. He sees that the best business success depends largely upon a liberal education. He sees that the training which gives due sense of proportion, which discriminates between the essential and the non-essential, which teaches what things are most worth doing is better in the long run than the technical or trade training, provided this latter is had at the expense of

the former. He sees that "the modern business man must learn to have enjoyment of the great things of literature and history," and that "there is a tremendous advantage to the boy who in the years when his character is most plastic can come into contact with the great deeds of other times recorded in past history, and with the great ideals of all ages recorded in poetry." Now what President Hadley recognizes and advocates in college education is universally true and applies as well both to secondary and elementary education. To quote him once more: "That education is best and highest which most fully brings home to the boy by illustrations of history, by inspiration of literature, by the teachings of the every-day life of the present time that none of us liveth for himself; that possessions mean power, and that power means duty."

* * *

Personal Character.

An appeal for the things which make for good character is never out of season. Neither is such an appeal limited in its application to any class or profession. And yet it should apply with peculiar force to the teaching profession. It is merely trite to say that in no other calling does so much depend upon character. We all admit this. But does it not seem that too little attention is sometimes given to the question of character in determining the fitness of men and women to teach? Is it not true that the relative value we place upon the things which determine fitness is in an inverse ratio to their importance? We find it far easier to test a candidate's knowledge of the branches he is expected to teach than to guage his native teaching ability. It is easier still to measure native ability than to judge accurately of character. And yet, in the whole examining process, the emphasis is placed most upon mere knowledge, and least upon the essentials of character.

In saying this there is no intention to reflect discredit upon examining boards anywhere. Like all officials they simply reflect and execute the popular spirit and will. To improve conditions there must first come a higher popular standard. For example, a teacher's license certifies that the holder has passed a satisfactory examination in certain specified branches, and possesses "a good moral character." Properly enough the examining board is made the judge both as to what constitutes a good moral character and as to how nearly the applicant measures up to the requirements. But right there comes the difficulty: an examiner may have heard that a candidate has certain bad habits which would disgrace the teaching profession, but the applicant comes armed with a written "testimonial" and secures the license. Here is a teacher standing high in his profession who frequently and openly does things which we teach children to be wrong, but his license is not revoked! Is it forsooth because he stands so high? Here is another who "is known" as a man who will not pay his debts until he is obliged to do so, yet he holds his license, and apparently finds no difficulty in getting it renewed. No reader need suspect that these are individual cases, for they are, alas, too numerous. Can it be that parents are willing to entrust their children to characterless teachers? Surely the schoolroom should call for a standard of honor and honesty and cleanliness not a whit lower than that of the pulpit. To demand it rests with the teachers themselves.

A noble, yet practical, woman, Alice Freeman Palmer, former president of Wellesley college, says: "The time will come when the examiner will ask first into the personal and private character of the teacher. Even high ideals are not secondary to noble character. It is not the learning that she has, nor the training that she has, that makes the true teacher. It is her personality. Many of the best teachers to-day never received a normal school certificate that they had been thoroughly grounded in the newest and most approved methods. Their success lies in the power of their own high characters, and their endeavor to promote through love and sympathy the best possibilities of the children under their charge. Professional training is not to be disparaged. It is a great power in itself, but it is not the greatest nor the highest. Manners and morals, and they are one, in the teacher's personal character are of far greater value. To feel that a teacher lives for a noble and beautiful ideal will make the pupil aspire to such an ideal."

THE CHILD AND THE SCHOOL.

VIEWS OF REPRESENTATIVE MEN.—II.

THE most rapid growth in the human brain takes place during the first seven years of a child's life. No child should be sent to school before the age of seven. The kindergarten simply directs natural energy through natural methods of play, etc., and is scarcely to be reckoned as a school. During the second seven years of a child the marvelous brain growth begins to slacken. It was planned by Nature that between the years of seven and fifteen the child should have rest. Into what Nature planned should be a period of rest, a time of moderate study, an immense amount of learning is crammed which is absolutely valueless because one-tenth of it is not absorbed, and the child is physically injured. To rob a child of the play time which belongs to him is a rank injustice.



EDWARD BOK.
Editor Ladies' Home Journal

It is unreasonable to expect a child between the ages of seven and fifteen to devote more than four hours each day to school work, and these four hours should include an hour of study either at school or at home, as seems most advisable. No child under fifteen years of age should be given any home study whatever by his teachers. After fourteen the brain has another period of rapid development, with special increase of the higher faculties. If too much strain has not been put upon mind and body during the previous years, then the child begins to learn with beneficial effects.

Too much is given to our children to learn, and a great deal of it is absolutely useless to them either for the present or the future. There must be shorter hours and the absolute abolishment of home study before the age of fifteen, and even after fifteen no evening study beyond an hour. If a child, when he reaches the age of fifteen, has been taught to read aloud pleasantly and intelligently, to write legibly, to spell correctly, to express himself clearly in a letter, to count accurately, to use his mind himself, to use his fingers so that his hands will be a help to him in earning his living—that is all that should be expected of the child, either boy or girl. That is enough for seven years of learning in the great formative period of life.

How to get these reforms for the parents, for their children is the next step. They can come only through closer cooperation of home and and school. The teacher and parent must come closer together. That is the root of the present evil. One means toward this end lies in frequent conferences between mother and teacher. The teacher must better know the timber she is seasoning.

This is an urgent case of demand for reform. Neglect has already worked untold injury. It is time to halt; high time to do something. A national crime lies at the feet of American parents: a crime which concerns their own children.

EDWARD BOK.

TALKS ON THE STUDY OF LITERATURE.—VI.

By EDWIN A. GREENLAW, A. M.

THE two preceding articles in this series have set forth in such detail the method of teaching *Macbeth* by the use of thought-questions that the last four acts of the drama may be passed over hastily. A few important topics will be suggested, and the teacher will be able to add others at his pleasure. Extended comment upon the text will not be given, and it is suggested that in order to understand the topics presented, it would be helpful to study with them a copy of the drama itself. The thought-questions and topics which follow should be understood as problems set for solution, and the teacher, not less than the pupil, should solve such problems until he has acquired the insight and the skill requisite to good teaching.

ACT II.—SCENE 1.

1. The banquet is over and the castle quiet for the night. Why is Banquo afraid to sleep? Note and interpret his words, "The cursed thoughts that nature gives way to in repose."

2. Study very carefully lines 10–30. Why does Banquo present at such a time the gift sent by the king to Lady Macbeth? *Why does he speak of the three weird sisters?* Try to determine the true attitude of Banquo toward Macbeth. At their parting, do they understand each other? Write out your interpretation of the first thirty lines of this scene, paying particular attention to the revelation of Banquo's character made therein.

3. Notice the introduction of the supernatural once more and try to account for it. Find any critical comments you can as to the meaning of the dagger episode. (See introduction to your text.) What is your feeling toward Macbeth now?

SCENE 2.

1. When she is alone, do you note any indications of fear or horror in the words of Lady Macbeth?

2. After the murder, note the peculiar character of the conversation between the two conspirators. Notice the monosyllabic replies and the irrelevance of some of the statements. They are utterly unnerved by the horror of their deed. Which recovers first, and at what point?

3. Commit to memory what Macbeth says about sleep.

4. Note the climax in this scene. Write in paragraph form the effect produced upon you by the scene, considering, (a) the author's purpose, and (b) his means for making clear that purpose. Note the effect of the repeated knocking, and weigh carefully Macbeth's last words.

SCENE 3.

1. Note the coarse humor in the words of the porter. Is this speech in keeping with the character of the man? This passage has given much trouble to the critics. Read the comments given upon it in the introduction, and form your own opinion, supporting it by the best arguments you can find.

2. From this point on, notice the blunders made by Macbeth. He is not a hardened criminal, adept at concealment, and the very anguish he suffers will cause him to betray himself. *Note* (l. 32) *that he does not knock* or *lead the way into the king's chamber.* Why?

3. Observe the introduction of the supernatural once more, in the speech of Lennox.

4. From this point to the end of the scene note the breathless rapidity with which the dramatist hurries us on. Watch carefully every word spoken by Macbeth.

5. How is Macduff affected? Banquo?

6. Note Macbeth's second blunder, this time even more serious. He accuses himself of having murdered the grooms, and, what is worse, attempts to defend his action. Do you see any reason for Lady Macbeth's swoon? Do you believe that it is real or feigned?

7. Note that all suspect Macbeth, but fear to accuse him. Observe how quickly they scatter. What grounds have they for believing that Macbeth murdered the king?

SCENE 4.

1. Note the entrance of the "oldest inhabitant."

2. In Macduff's short, but vigorous sentences, try to discern the character of the man.

3. What is the purpose of this scene?

REVIEW OF ACT II.

1. Write in paragraph form the story of the drama as developed in this act. What is the theme?

2. Read all the critical comments given in the introduction to the text you are using, making reference, where necessary, to the parts of the drama which illustrate the criticisms.

3. Observe that Macbeth was not at first a wicked man; that his ambition was selfish in that he cared only for personal advancement and not for the welfare of his nation or his king; that although he was a splendid general and had energy and ability, yet he had not sufficient strength of character to repel the first suggestion of evil. Character is formed by the constant choice between right and wrong which we are forced to make every day.

ACT III. SCENE 1.

1. Banquo once more appears, and his words at this point should be carefully studied. Do you think that he has any plan in mind? What kind of a man do you think him to be?

2. Observe the special courtesy with which Banquo is treated by Macbeth and the queen, and determine the reason. Do you suspect anything from the king's minute questioning?

3. In the lines which follow, note that (1) Macbeth is ill at ease and fearful; (2) he thinks that he can gain security if he removes Banquo; (3) he tries to justify this new crime to himself.

4. Is Shakespeare representing human nature correctly when he shows that the second crime is more easily committed than the first?

5. Observe Macbeth's efforts to give to the murderers reasons why they should assassinate Banquo. In view of the fact that such work is their trade, is such argument necessary? Account for his action, and say what light is thrown upon his character.

SCENE 2.

1. Note that Macbeth only hints at his purpose regarding Banquo. Why does he not tell all to the queen?

2. Make a list of phrases and sentences which show the mental condition of Macbeth and the queen, making your selections from this scene.

3. "Things bad begun make strong themselves by ill." Note the lessons taught by the scene.

4. Commit to memory lines 46–53. Point out the poetic element in this passage.

5. Prepare a study of the rhetorical figures in this scene. What do you consider to be the best figure in the scene? Why?

SCENE 3.

As your notes suggest, some critics think that the third murderer is Macbeth. Judging from the words spoken by the third murderer, do you see any reason for so thinking?

SCENE 4.

1. This scene must be studied very carefully. Of course the important part is that relating to the appearance of the ghost. Note Macbeth's hypocritical wish for Banquo's presence, and the way in which his desire is granted.

2. Here Macbeth betrays himself to his nobles. Mark carefully all phrases and sentences in which he bears unconscious witness against himself. Study also Lady Macbeth's words, observing which of her sentences are addressed to the company and which to the king.

3. Note how hard it is for Macbeth to learn his lesson, since he once more wishes for Banquo.

4. The banquet is broken up and the guests depart. What do you suppose they talk about when away from the king? If you had been among the banqueters, how would this episode have affected you?

5. Write a paragraph, telling what you think was the mental condition of the king and the queen at the conclusion of this scene. Make references to lines of the text in corroboration of your statements.

6. Make a list of unusual words and expressions found in the scene.

SCENE 6.

1. What is the purpose of this scene? How do the people now feel toward Macbeth?

2. What is the rhetorical figure in the speech of Lennox at the beginning of the scene? Are his words to be interpreted literally, or is there deeper meaning beneath?

3. Judging from the words spoken by Lennox and the noble, in what respects was Scotland "a suffering country?"

4. Scan lines 1–24.

REVIEW OF ACT III.

1. What is the theme of this act? Why does the act end at this point? In general, what may we expect for the future of Scotland and of Macbeth, under conditions such as these?

2. Write in paragraph form the story of Act III.

ACT IV. SCENE 1.

1. In the first fifty lines of this scene study carefully the following topics:

(a) Metre and rhyme, scanning ten lines. Why does Shakespeare use rhyme here and not generally in other parts of the drama? Is the rhyme adapted to the subject Why?

(b) The vocabulary. In this passage Shakespeare well illustrates his marvelous power over words. Make a list of the unfamiliar and unusual words in the selection, and by comparing with the whole number of words used, compute the proportion between them.

(c) Onomatopoetic words; those in which the sense is suggested by the sound. Thus, a poet is able to suggest his thought by using such imitative words as *clang*, *buzz*, *hiss*, *toll*, *tinkle*, etc.

Make a list of the words in this passage which illustrate this quality, and state how they contribute to the general effect.

(d) Alliteration, or the repetition of consonants and vowels in the same verse, generally at the beginning of the words, but sometimes at the end. In the line, "Apt alliteration's artful aid," the letter *a* is thus used. Find cases of alliteration in the present passage.

(e) What consonants are most frequently used in the selection? Can you determine any reason for this?

(f) Can you see the hideous dance of the hags about the cauldron? Form a mental picture of the scene, making the details as distinct as possible.

(g) With your observations under the preceding topics as a basis for your statements, write a paragraph commenting upon this passage, telling what was the purpose of the author at this point, and naming the means employed to make clear that object. Give quotations and refer to specific words as you write.

2. A man is known by the company he keeps. What do you think of Macbeth as he appears in the witches' cavern. Since, as we have repeatedly seen in the drama, a man shows his character by his actions, how are we to interpret this?

3. Read the story of Saul and the witch at Endor (I. Samuel, ch. 28), and notice the similarity between that and the present scene. In each case the witches are promised immunity from punishment, and morally there is resemblance between the two kings.

4. In the first meeting between Macbeth and the witches, in Act I, we were awed by the knowledge that supernatural powers were interested in him. Is the effect the same now? Why, or why not?

5. What does Macbeth mean in lines 50–60? What sort of a man was he, if he could say such things?

6. Note how he is led on to his ruin by his false interpretation of the words spoken by the apparitions.

7. When the apparitions of the eight kings appear, how is Macbeth affected? Form your conclusions from his words. How does this passage compare in force with a passage from the *Sketch Book*?

8. What is the general effect upon Macbeth of his visit to the witches? Note that his nobles come here to consult him, so open is his visit.

SCENE 2.

1. Note the rapidity with which the play moves forward. In the preceding scene Macbeth declared his purpose to murder Macduff's family. Why, then, are we introduced to Lady Macduff and her son in this scene?

2. Study all that is said by the boy? How old do you think him to be? What do you think of Lady Macduff? Do you pity them? Less, or more than you pitied Duncan when he entered Macbeth's castle? What do you think of Macbeth, now that he has determined to murder innocent women and boys?

3. The artistic value of this scene is very high. Review it carefully, and tell why this is so. What has Shakespeare accomplished in it, and how? Bring written answer to this question.

SCENE 3.

1. Study carefully the character of Macduff and of Malcolm. The latter has not before been prominent, and this scene gives a fair idea of his character. Why does he misrepresent himself to Macduff?

2. Study very carefully all that Macduff says, asking yourself constantly, "What

sort of man was he, if he said this?" Is he a man of deep feeling, or inclined to be cold-hearted? Is he shallow and superficial, or is he of strong character? Is he selfish, or a true patriot? Do his words show effeminacy, boldness, refinement, or cunning? Give reasons for your statements, and mark in your books all significant phrases and sentences.

3. Now what of Malcolm? Does he desire Macduff to be faithful to him for selfish reasons, or does he wish him to be true to Scotland? Do you like Malcolm or not?

4. In lines 160–180 you have new means of determining the effect of Macbeth's rule. Read carefully, several times, the lines telling how Ross broke to Macduff the awful tidings he came to tell. Note the pathos of the whole. Remember your impressions of Lady Macduff and her son. Note how powerfully the agony of a strong man is portrayed. At first Macduff is stunned and bewildered. What is the force of the epithet "hell-kite," applied to Macbeth?

5. Notice how eager Malcolm is to use this anguish and rage for the benefit of Scotland. Mark the words which show this.

6. Do you see Shakespeare's purpose in this scene and the preceding one? Which would be most sure to punish the guilty king, Macduff the patriot, or Macduff the broken-hearted?

REVIEW OF ACT IV.

1. Write a story of the act.

2. Write a paragraph telling what you think of this fourth act, considering the elements of strength and of artistic power, and giving your personal impressions of the act as a whole. Be definite in what you say, and support your statements by references to the text where necessary.

The first act prepares us for the murder of Duncan; the fourth leads to the punishment of Macbeth. All our sympathy with the brave general and our wishes that he might become king now disappear, and we are willing to see him pay the penalty for his crime. The steps by which he has become degraded in our estimation should be carefully noted. The murder of Duncan was the first step in crime; the murder of Banquo followed naturally enough; next the once noble general, now the suspicious king, sinks to the interview with the witches in their cavern; and lastly, the brutal and unjustifiable assassination of Lady Macduff and her innocent boy completes the change in our feelings from admiration and sympathy to disgust.

We feel new interest in Macduff, and in our pity for him in his hour of anguish we see that Macbeth has at last set in motion the agencies that will compass his own downfall. Macbeth is doomed, not because the fates had doomed him in the beginning, but because by his own act he has placed himself where escape is impossible. The man who dares let his boat drift into the swift current above Niagara is not the helpless creature of Fate; he can recover himself at any time; he does not see that he has started on a course which ends in death, or, if he sees it, he thinks that he can save himself after playing with the danger for a little. But soon the rush of waters becomes fierce and ever yet more fierce, until, in spite of the sympathy the spectators may feel for his frightful danger, in spite of his wild remorse and desperate efforts to escape, the current whirls him resistlessly over the precipice into the hell of waters below.

So with Macbeth, so with all who welcome even the thought of wrong. Ambition is not in itself evil,—it is a good; but Macbeth's ambition was first selfish, next unscrupulous, and at last remorseless; and now he suffers the consequences.

It is an old story, this tale of the fall of a man; but rarely is it told with such tremendous impressiveness as here. And in the work of the school, none can fail to see the rare educational value of such a masterpiece as *Macbeth*.

NORTHWESTERN UNIVERSITY.

My heart leaps up when I behold
A rainbow in the sky;
So was it when my life began,
So is it now I am a man,
So be it when I shall grow old,
Or let me die!
The child is father of the man;
And I could wish my days to be
Bound each to each by natural piety.
—*Wordsworth.*

THE INDIANA UNIVERSITY BIOLOGICAL STATION.*

By CARL H. EIGENMANN.
Director of the Station from its beginning to the present year.

THE advantages of biological stations for purposes of research and instruction have had many advocates in recent years.



FIG. 1.—THE BIOLOGICAL STATION DURING ITS FIRST YEAR AT TURKEY LAKE.

"There can be little doubt" says Parker, "that the study of zoology is most profitably as well as most pleasantly begun in the field and by the seashore, in the zoological garden and the aquarium." "The establishment of biological stations has done more to advance the study of zoology than any other one thing in this generation," says Conklin. "Certain desiderata are evident," adds Kofoid: "more biological stations, so that the conclusions arrived at in one locality may be extended and corrected in a score of others; and finally some biological Froebel, who shall demonstrate the disciplinary and cultural value of ecology as a field of biological instruction and establish a standard for others to imitate. In their work we may look for the happy combination of the sympathetic observation of the old-time naturalist, the technical skill and searching logic of the morphologist, and the patient zeal and ingenuity of the experimental physiologist, a combination, let us hope, that shall unlock not a few of the secrets of the world of life."

"It is unquestionably true that the tendency within recent years" says Ward "has been to make the university-trained scientist a laboratory man, unacquainted with work out of doors and among living things. Thus, both through the influence of the investigators in the case of



FIG. 2.—THE STATION DURING SUCCEEDING YEARS AT TURKEY LAKE.

* Modified by the author for THE INLAND EDUCATOR from an article in *Science*.

those stations which do not carry on directly any educational work, and through the teaching of those which do conduct summer instructional courses, new life will be instilled into the teaching of natural history throughout our country."

"Every teacher in the biological sciences must strive as best he may against the tendency to make house-trained students, unacquainted with living things as they actually exist, and against the tendency to narrowness, which is the bane of all specialists," says Herrick.

The biological station of the Indiana University was planned with a well defined object in view, the study of the variation of the non-migratory vertebrates in some unit of environment. The station was to be located on a lake which would present well circumscribed boundaries within which the conditions were supposed to be nearly uniform at any time and from season to season.

Here large numbers of all the non-migratory vertebrates were to be collected, their characteristics tabulated and compared with similar series from other lakes. We were, in short, to conduct a statistical inquiry into evolution.

For the work in hand many of the lakes were available. Our location was therefore determined by the finding of an old boathouse suitable for a laboratory on the shore of Turkey lake.

For the first year the trustees of the university granted the use of the apparatus of the zoological department provided the station would in no way be an expense to the university. After the first year the trustees provided generously for the permanent equipment of the station. To help defray expenses a number of courses of instruction were offered for a few students. It was expected that there would be about ten in the party the first year, but there were nineteen.

The conditions for biological work, coupled with camp life on a fine lake, five miles from the nearest village and free from university lecture-hour appointments, proved so attractive that during the second summer the number of students rose from nineteen to thirty-two, and in the third to sixty-three, and in the fourth to 103, representing eight states.



FIG. 8.—THE ENVIRONMENT OF THE BIOLOGICAL STATION AT WINONA.

Certain restrictions reduced this number to ninety-one during the present season. The large increase in the number of students kept us more than busy to provide for their increasing needs, but the collection of the material for the study of variation was not neglected.

The material accumulated during the first four years of the station is unique. We have, for instance, thousands of specimens of the yellow perch of different broods collected in successive years. These when examined will show:

I. The extent and nature of the variation in the newly born.

a. In any brood or year.

b. In the broods of successive years, or the annual variation.

II. The extent and nature of the variation at the age of one or two years of each brood.

The results under No. II compared with the results under No. I for any brood will give us the extent of the effect of natural selection in killing off individuals with any given peculiarity.

At the end of the fourth year the station was moved to Winona Lake where the facilities for caring for the increasing number of students are much better. Two buildings were erected and given to the station by the Winona Assembly and Summer School. They are situated in the angle where Cherry creek enters Winona lake, eighteen miles from the original location. They are surrounded by a great variety of natural conditions of water, woods, swamps and meadows. The buildings are 20 by 45 feet. One or both will be lengthened to 60 feet during the winter.

The special feature in the construction is the cement floors of the ground story. This arrangement makes the tables on these floors nearly independent of people moving in any part of the buildings. On one of these floors there are private laboratories, the lake survey laboratory, and the office of the director. The lower floor of the second building is given to embryology and bacteriology. The notable feature of this floor is the (accidentally) constant temperature closet of the bacteriological laboratory. This is simply a pit beneath the stairway about a foot deep and cemented. The temperature without the use of ice did not vary more than 1° from 20 centigrade during the entire summer. The upper floor in one building is given to elementary zoology and that of the other to botany. We have small sheds for incubators away from the buildings to avoid the danger of fire. The bacteriological kitchen and the lecture room are separate tents. The most urgent need of the station is a building for general lectures and for embryology.

The water supply deserves mention. Artesian water was struck 75 feet below the



FIG. 4.—THE BUILDINGS OF THE STATION FROM THE MOUTH OF CHERRY CREEK.

surface midway between the two buildings. From this we get a flow of about 5,000 gallons per day. The water is received in a small tank and this is tapped by pipes leading to each floor of the buildings where there are small pitcher pumps. The overflow from the receiving tank leads into a larger steel tank with covers. This tank is used for experiments with blind fishes. The overflow from this leads into pools constructed for experimental work.

The springs about Winona Park flow in part into decorative pools. These will be used for the experiment in rearing cave animals in the light. One of them about thirty feet long is now inhabited by an experimental colony of blind Amblyopsis where their habits can be observed without the restrictions imposed by the conditions found in a cave.

In recognition of the fact that "the teacher who has no time for research rapidly becomes an ineffective and uninspiring teacher, and that overteaching defeats its own ends," the instruction should be in the nature of a guiding, the giving not of a string of recipes, but of sound principles enabling the student to work out his own salvation.

Since, wherever he may go, the student must adapt himself to his environment, it is the plan to catch what we can and study what we catch rather than to follow fixed courses. The facilities for catching, however, are very favorable. We have the lake in front of us, the woods behind, the creek on one side, and a meadow on the other. Here the entire day of the student is given to collecting and exploring expeditions, lectures and laboratory work.

A list of the students who have been at the station would include a majority of the teachers of biology in Indiana and several have found appointments elsewhere.

During the first summer, courses in zoology, embryology and survey work were given by the writer and Mr. W. J. Moenkhaus.

During the past summer, courses of instruction have been given in zoology, botany, cytology, bacteriology, embryology, and survey methods. As soon as the necessary buildings can be secured, courses in neurology and comparative psychology and physiology will be added.

The department of instruction is self-sustaining, but facilities for research are still limited and here is an opportunity for some public spirited citizen.

"Research in all directions, in fact, meets with such reward that it should be sustained by all persons who desire to encourage the progress of knowledge. But the rich men of our country do not discriminate between this function and that of teaching. They found universities with princely liberality, but research has to struggle with poverty of means and deficiency of time. Great libraries are founded, but the work in the laboratory from which issue the books which create libraries receives comparatively little substantial encouragement. * * * Initiative and discovery are the conditions of progress, and no better service could be rendered to humanity than the creation of opportunities for their activity."

ALCOHOLIC BEVERAGES.

By J. T. SCOVELL.

ALCOHOL is made from starch which is abundant in barley, rye, and corn. It is a light colorless liquid having a pleasant odor and a pungent taste.

Alcohol is used extensively in the manufacture of drugs and medicines, and is useful in many ways in the arts and sciences. But it is used chiefly and most extensively as the basis of *alcoholic beverages*. Pure alcohol acts as a poison, quickly destroying every form of plant or animal life immersed in it. It destroys the life, but preserves the body from disintegration and decay. Alcohol in dilute form acts at first as a stimulant, and then as a sedative or anesthetic, and if taken in a sufficient quantity the anesthesia will be profound—as complete as that caused by chloroform or ether. When the anesthesia passes away there may be headache, sickness of the stomach or other effects indicating abnormal action; but these are soon gone, leaving no evidence of permanent change of tissue. One may pass through this experience, at inter-

vals of two or three weeks, many times before any abnormal changes appear. Dilute alcohol, as in fermented liquors, used temperately, generally produces pleasant and agreeable effects. It acts as a food, it promotes digestion, quiets the nerves, drives away care, promotes sociability, inspires hope, and produces a comfortable restful state of mind and body that aids materially in fitting them for a renewal of activity. The intemperate use of alcohol in any form is harmful and the results are often disastrous. It poisons the blood, weakens the muscles and disorders the brain; it obscures the moral sense, clouds the intellect, dulls the sensibilities and stimulates the passions; it degrades the man morally, mentally and physically. In special cases its baneful effects cannot be exaggerated or overdrawn.

The intemperate use of alcoholic beverages may not cause specific diseases, but it does cause such a degeneration of tissue that the system is easily invaded by many forms of disease. The mind also becomes erratic and weak, the victim often sinking into insanity.

The intemperate man often squanders his property, loses his capacity for work and becomes poor, or through his obscured moral sense he becomes a criminal. In fact, intemperance is a fruitful source of poverty and crime. Thus overindulgence in alcoholic liquors becomes a public as well as a personal calamity.

EFFECTS DIFFER WITH TEMPERAMENT.

People differ widely in their susceptibility to the evil influence of alcoholic beverages.

The American Indian is more susceptible than the white man, and the white man is affected more easily than the negro. The Irishman is more susceptible than the Englishman, and some Englishmen are more easily affected than others. For this reason the temperate use of alcoholic liquors has different meaning for different persons and nationalties. For the American Indian and other susceptibles a temperate use of alcoholic beverages must mean *total abstinence.* For the great majority of people it might mean the use of fermented liquors up to the equivalent of two ounces of pure alcohol daily. Used in this manner alcohol is said to be a food something like starch. Regarding the influence of the use of alcoholic liquors upon nations history gives no very reliable testimony. We know that some of the Greeks, Romans, Egyptians and other Eastern nations used alcoholic beverages, often to excess. But we do not know whether intemperance was common so that it became an important factor in the degeneration of those people. The Mohammedan nations of Asia are generally abstemious, and so are the Turks of Europe, while the other nations of Europe use alcoholic liquors very freely. Herbert Spencer says "The Spartans were brutal but sober, while the Athenians were more highly cultured but by no means sober. And who would contend that in social type or conduct the Asiatic is superior to the European, or that sober Turkey is higher in social life than whisky-drinking Scotland. Evidently the relations between drinking habits and kinds of social life are obscure. We cannot assert a regular proportion between temperance and civilization, nor between intemperance and moral degradation."

THE DRINK HABIT AMONG GERMANS, ENGLISH AND AMERICANS.

The German races from the earliest times have been noted for their drinking habits, in many cases developing the grossest intemperance. In old English and Danish times the excess of drinking was great, and drunkenness was a common vice. If we may believe the testimony these Germanic races have easily surpassed all others in the quantities of alcoholic liquors used, and in the universality of their use by all grades of society. Yet, along with these drinking habits, there has been a gradual development along every line of human activity, so that the savage and barbarous tribes of the early centuries, as Germans, Englishmen, and Americans have become the leading, the foremost people of the world. They are equal to any others physically and surpass all others intellectually, industrially, morally and socially. Did their drinking habits help or hinder these people in their upward and forward march, did they succeed in spite of their use of alcoholic liquors, or did the use of liquor really help them in reaching their present high position? Who can tell? It is a question for study. The evils arising from the use of alcoholic liquors by susceptibles, are in many cases frightful; they can hardly be exaggerated, but happily such cases are rare—are the exception. A lecturer reported in the *New Voice* of Aug. 31, 1899, claims that there are 700,000 drunkards in the United States. The number seems great, and one wonders if the claim is legitimate, and wonders if the number includes all hard drinkers who are still able to work every day, who are active members of society, or whether the number only includes imbeciles. If the number is correct, it means that less than one per cent. of the people of the United States are drunkards. If this number were total imbeciles from drink it would hardly

indicate physical, mental or moral degeneration for the nation. The evils of intemperance, disastrous as they are for some individuals, do not seem to threaten the integrity of the nation.

In many cases intemperance may be regarded as a cause of crime, but in general it is merely a companion or associate of crime, caused by the same conditions and circumstances that develop crime. In many cases intemperance seems to be a result or consequent of crime. Poverty is also a cause of intemperance. The worry and pain, the lack of food and clothing and shelter incident to poverty are efficient causes of intemperance. Some people think that the moral, social and economical conditions that make poverty and crime possible are worse, are more harmful to the individual, more dangerous to the public than are the evils of intemperance. The liquor problem is one of the most important questions of our time. It is wide-reaching, many-sided and complicated. So little is really known about it that the widest difference of opinion exists among would-be reformers as to the best method for solving the problem.

IS ALCOHOL A FOOD?

Some people believe that alcohol in any form, in any quantity is a poison, and that its use is always harmful. Such people consider it wrong to use alcohol however dilute, and are teetotalers and prohibitionists. Others believe that alcohol in dilute form is not a poison but a food, and that its use may be not only harmless but beneficial. Dr. Carpenter, Professor Liebig, Professor Johnson and other eminent physiologists as early as 1850 taught that alcohol rightly used is a food. Noted physiologists from that time to this have taught that alcohol is a food. In a sweet liquid containing ten per cent. of alcohol the yeast plant will thrive and grow, but in a liquid containing fourteen per cent. of alcohol the yeast is killed, it cannot grow. Ten per cent. alcohol does not decompose the protoplasm of yeast, does not hinder its growth, and is not a poison to yeast. Ten per cent. alcohol as in wines, used temperately does not decompose protoplasm in the human body and is not a poison as that term is generally understood. The history of the temperate use of light liquors in Germany, England, Scotland, Spain, Canada and the United States, shows that such liquors are not poisons, and if not poisons they are probably in some sense foods. They may not be economic foods, not necessary foods, not tissue-forming foods, but they are decomposed in the body and do seem to yield energy, much as fats and starch serve as foods. People who believe that alcohol may be used so as to serve as food and not as a poison, do not, as a rule, consider the temperate use of alcoholic beverages a crime. They advocate some method of regulating the sale and use of such liquors, so as to promote temperance.

REFORM BY EVOLUTION.

The use of alcoholic beverages has been common from the earliest historic times. Always and everywhere people have recognized the evils of intemperance and drunkenness. The pleasures and benefits attending the use of wine are frequently mentioned in both sacred and profane history, and in each we find warnings against excess and drunkenness. Doubtless there have always been temperance reformers, but it was left with the people of this country to start the first organized movement against the use of alcoholic beverages. After many years the temperance movement was inaugurated in England, Scotland, Norway, Sweden, and in Germany. The temperance people constitute a large portion of our nation. They have used moral suasion, they have mingled in politics, have framed and enacted many different laws, have taught temperance in the church, in the school and on the lecture platform. They have not accomplished all they hoped, but they have done much toward forming a public sentiment against the sale and use or intemperate use of alcoholic liquors. It is claimed by many that there is less of whisky and other strong liquors used now than formerly, and that while more light liquor is used, yet the per cent. of alcohol consumed is clearly less than ever before. But these results are not wholly due to the efforts of temperance reformers. With the opening of a new country there was much of grossness, lawlessness and crime. Society was unsettled and hard drinking was common. As the population increased, settled industries and social institutions were established, and the grossness and lawlessness and hard drinking are gradually passing away, as by a kind of evolution. Employers of labor, in the face of sharp competition, find it necessary to employ sober, non-drinking men, at least in the more responsible or better positions. And the employers of labor must themselves go to their work with brains free from the sedative, muddling action of strong drink if they hope to succeed in the fierce struggle for existence. This principle is active in all industries and in all professions.

REFORM BY SUASION AND STATUTE.

Giving these natural agencies or tendencies

their legitimate credits, but little is left to the credit of the temperance organizations. Why is it that with so much agitation, so much activity, so little has been accomplished?

Differences of opinion among temperance reformers as to methods of work has greatly limited the quantity of work done, and limited the effectiveness of that work. The radical wing of temperance reformers believe that alcoholic liquors in any form are poisons, that their manufacture is a crime, that their use is a crime, and that the liquor traffic is a crime. They would unhesitatingly wipe out the whole business, manufacture, traffic and use. These people are sure that their ideas are correct, and think that to attempt anything below their ideal would be cowardly and criminal. They have no patience with people who hold other opinions and advocate other methods. They frequently denounce with violence and bitterness those who think and work along other lines. In fact the bitter and intemperate language, the peculiar and often unmanly methods of work, and the frequent exaggeration has done much to bring the whole temperance movement into disrepute, and to shut out many earnest temperance people from any participation in the temperance work.

During the latter half of the century many different laws have been passed in the interests of temperance. Not one of these laws has ever been generally enforced, and no one has ever remained long on the statute books without amendment or repeal. A careful study of the liquor legislation in eight different states by competent men resulted in the statement that "The liquor law which will really seriously check intemperance is still to be sought for."

This result indicates that the work done has not been based upon nor guided by a comprehensive knowledge of the subject. Evidently the subject is not well understood. But little systematic investigation has ever been made.

MARCH.

Slayer of winter, art thou here again?
O welcome, thou that bring'st the summer nigh!
The bitter wind makes not thy victory vain,
Nor will we mock thee for thy faint blue sky.
Welcome, O March! whose kindly days and dry
Make April ready for the throstle's song,
The first redresser of the winter's wrong!

Yea, welcome, March! and though I die ere June,
Yet for the hope of life I give thee praise,
Striving to swell the burden of the tune
That even now I hear thy brown birds raise,
Unmindful of the past or coming days;
Who sing, "O joy! a new year is begun!
What happiness to look upon the sun!"

O, what begetteth all this storm of bliss,
But Death himself, who, crying solemnly,
Even from the heart of sweet Forgetfulness,
Bids us, "Rejoice! lest pleasureless ye die.
Within a little time must ye go by.
Stretch forth your open hands, and, while ye live,
Take all the gifts that Death and Life may give."

—*William Morris.*

MATHEMATICS AND PROGRESS.

By C. A. WALDO.

THE essential difficulty in discussing a mathematical topic is the fact that this science possesses the most highly developed symbolism and an almost perfect technical language. Both these attributes condense our reasoning to a minimum and make it unintelligible to the uninitiated. In trying to popularize we are in danger of becoming puerile. Most mathematicians of our time have abandoned the former attempt and therefore speak a language absolutely without meaning to the average man. Often the use of symbols and technical terms is not even a matter of choice. It is a necessity, for the ideas sought to be conveyed can be expressed in no other language. The mathematician, therefore, often labors on with no understanding or appreciation of his work or its results on the part of the general public. His subject is dumped into the same class with the dead languages. Latin, Greek and mathematics must form an unnatural alliance in a fight for recognition. Too frequently the mathematician is grudgingly given but a tithe of what he claims, and even then he is asked why he should cumber the ground and impede the way to higher and more useful pursuits. Before Latin had a literature mathematics was. Now, when the conviction is rapidly gaining ground, and in all progressive institutions being put into practice, that a smattering of Greek and Latin soon forgotten is not essential in education, mathematics has entered new fields and conquered new territory. Its cultivation has gone forward in the last generation in leaps and bounds, its advance has kept pace with and in a large measure conditioned, both on the material and intellectual side, the tremendous and unexampled progress of civilization in that period.

There are three general aspects in which mathematics can be viewed:

1. As a disciplinary study.
2. As a cult.
3. As a tool.

Curriculum makers place mathematics of some kind in all elementary courses. Why they do so is not, I think, always clear to them: often because such has been the custom from time immemorial. There is, also, usually, a conviction that the lower ranges of the subject are necessary for the ordinary business of life. There is a vague notion that the mathematics a little further along furnishes excellent material for discipline, but beyond that everything is quite hazy except with the favored few.

As a discipline these studies need no apology. Their influence in the development of the reasoning powers is unquestioned. They exercise the muscles and sharpen the teeth of the logical faculty. They furnish the growing mind with exercise in useful knowledge with reference to which it can have absolutely no prejudice and, while leading to certain truth, generate confidence in intellectual powers. They develop the inventive faculty by sharpening the powers of comparison, by diversifying and enriching the powers of attack, by developing the power of long continued attention and concentration.

As a cult, pursued for its own sake, it furnishes one of the highest occupations of the intellect. The mind revels in the realm of pure thought, and each triumph must bring the thinker closer to that all-prevading intelligence whose very existence and activity entirely removed from chance and imperfect knowledge must be conditioned by mathematical necessity.

These reasons for the pursuit of mathematical study are good enough for the scholar, but they do not convince nor satisfy the great mass of mankind. Their question is not what intellectual exaltation, but what practical use; not what dreams, but what results. What has mathematics done that it should commend itself to the great struggling masses of humanity who are busily engaged in adding to the surplus products of the race, who are breaking the virgin sod or swinging the artisan's hammer or directing the world's exchanges? Has mathematics any right to stand with physics, chemistry, botany, zoology, geology, whose cultivation has revolutionized civilized life?

Can a science which begins with assumptions never in perfect accord with fact and which ends with conclusions impossible of exact application ever get its feet on the ground sufficiently to secure a leverage for pushing along the car of progress? Modern civilization is largely based upon what we call material progress. Is mathematics necessary to material progress? Is it an essential tool of progress?

The American people are unusually intelligent, but is it not true that no more than one per cent. of them ever have any adequate conception of the innumerable ways in which geometry enters into their every-day life?

Houses of all kinds, from the humble cottage

to the manufacturers building of the White City, from the backwoods meeting-house to the vaulted cathedral, first grow on paper under the magic of geometry. Bridges and everything that rolls over them, shops and every manufactured product that comes out of them, grow into being in the same way.

Only a Michæl Angelo can hew out a statue without model or drawing; but Raphæl, himself, must resort to mathematical perspective for depth and sky. Not of Euclid do the towering buildings of a teeming city and its diversified industries attest, so much as they do of the Frenchman Monge upon whose discoveries and researches are based our systems of industrial drawing now so rapidly and deservedly gaining ground. The time, I believe, is not remote when descriptive geometry in some of its phases will find a more open way into the high schools, and will insist on recognition whatever else may suffer. The heart of the shop is the draughting room,—a room without which the trunk line, the ocean steamship and a thousand and one things necessary to our complex civilization can not exist.

So essential is modern geometry to technology that it is safe to say the latter cannot exist without the former. Through geometry the controlling mind translates the creative idea to the willing worker, and what was only a dream of beauty or utility now stands clothed in material form under the eye of the world for its edification, elevation and use. The artist whose masterpieces adorn our walls, first groups his figures as he wishes them to appear, then he calls geometry to his assistance to make them seem to be where he wishes them.

We mistake, however, if we confine the services of geometry to technology. Nature is continually inviting the observant mind to geometric study. The beautiful crystalline forms which abound in the rocks of the globe, in the snow and ice speak of unity in infinite diversity. Under the microscope the thinnest plate of shapeless rock, the very particles of dust at our feet tell through shape alone a story of origin and character, interesting and valuable alike to the physicist, the geologist and the chemist.

Analytic geometry occupies the border land between geometry and the higher analysis. The elements of this subject so far as the construction of loci is concerned, are rapidly becoming the possession of the reading public. The variation of temperature, of humidity, of productivity, of commerce, of crime and of the price of wheat, from hour to hour, or from day to day, or from season to season are immediately expressed to the eye by curves in which portions of time are the horizontal measurements and the various values of the function are the vertical. In science the natural way to express one series of facts dependent upon another is through a curve. Passing on from loci which are so full of meaning and so suggestive of causal relations, it is customary to discuss in detail the circle, the parabola, the ellipse and the hyperbole. The laws of gravitation lead to these curves and they are the fundamental orbits of the bodies of the universe. In terrestrial matters they lie at the basis of the laws governing stresses and strains, the study of optics, the propagation of impulses in homogeneous media, and a thousand practical things. As we rise higher and approach analysis we trace lines along which stresses are propagated, and materialize these in the beautiful steel bridge with its parts nicely shaped and adjusted to the load it is to carry. Advancing further our lines become in the strain diagram a veritable graphic calculus, through which we discover the stress with which any load, fixed or moving, strains a structure, and therefore, through it, find a ready means of designing our creations to resist safely the stresses to which they will be subjected.

But this brings us to the question of analysis—the other side of our subject. I shall not dwell upon algebra as we usually understand that term in high school and elementary college work. I need only to speak of it as generalized arithmetic to recall to you how it gathers up the rules of the lower subject and condenses and generalizes them, and how by introducing the result sought at the beginning of a series of operations we easily carry to a conclusion logical sequences, otherwise exceedingly difficult to follow, and ascertain whether or not the problem proposed is capable of solution.

It must be confessed, however, that algebra in the school sense is very largely a discipline, little used in the ordinary affairs of life and finding its principal utility in the studies which lie beyond. Yet to pursue these with ease and success a knowledge of common algebraic methods and facility in algebraic manipulation including the analysis of the angle is a prime requisite.

I come to speak of the higher analysis in the sense in which it is ordinarily applied, that is the infinitesimal calculus and its developments and allied subjects, the invention of which marks an epoch in human progress second, I believe, to no other scientific event.

It is curious when we think back over human advancement that some of the things now most patent to our senses escape recognition so long.

The alchemist stumbled through centuries without learning the nature of air and water. The most puerile ideas regarding the earth's structure prevailed down to the American Revolution, and later. And so while arithmetic, Euclid, Diophantine analysis and trigonometry are highly artificial, calculus brings us back to nature. Space and time were continually thrusting themselves upon the attention of man, motion in the former, rate in the latter as exemplified by every moving thing and changing substance, and were perpetually inviting attention to an arithmetic that took hold upon continous number and rate of change. Yet, for centuries, without result. The method of exhaustions came very near to the invention of the calculus, yet Grecian civilization with its brilliant record flourished and died without any knowledge of it. A Scotch professor in Dalhousie university was accustomed to say that with the calculus the Greeks would easily have outstripped us in invention. In depth and clearness of thought, in majesty, beauty and originality of ideas and ideals, in strength and suppleness of limb and delicacy of touch they were clearly our masters. They could geometrize amazingly, but they had no science of continuous number, therefore modern civilization is passing theirs with giant strides.

(Concluded in April.)

PURDUE UNIVERSITY.

THE COMPOUND SENTENCE.

By J. B. WISELY.

IN the last article a complete analysis of the simple sentence was given. As shown there, the pupil gains the knowledge required to give this complete analysis slowly, step by step. Every time he works out a point he analyzes sentences partially, so far as his knowledge extends and in this way, proceeding gradually, seeing in many sentences each point he masters, he is finally able to give a complete analysis or all the facts concerning the simple sentence and a reason for each statement.

It is not intended that the pupil shall always use the exact words used in analyzing the sentence in the last article, or that he shall use the same words every time. In fact, any set expressions are to be avoided as tending to formalism. Let the pupil be perfectly free to express his results in his own way, only see to it carefully that he uses correct English. After he is familiar with the reasons for the statements, they may be omitted. When he is perfectly sure of the more elementary facts, let him omit the statement of those and grapple with the more difficult points in the analysis. When the teacher is sure that the pupil sees the relation between the thought and the sentence, she may cease requiring him to analyze the thought.

These same conditions and suggestions will apply to the complete analysis of the compound sentence, which follows:

Complete Analysis of the Compound Sentence.

A fool, whom no man respects, speaks all his mind, but a wise man reserves something until hereafter.

1. Classify the sentence and give reasons.

a. On basis of purpose.

b. On basis of number and relation of thoughts expressed.

2. Give the members and reasons.

3. Name the conjunction and state the kind of relation expressed by it. Give reasons.

4. Verify the punctuation.

5. Analyze each member.

a. Give principal elements of thoughts, and reasons.

b. Give principal parts of members, and reasons.

c. Give the principal word in each part, the modifiers of it, and all the modifiers of these modifiers. Give reasons for each modifier. In giving modifiers, analyse phrases and clauses, giving uses of connective words.

1. a. On basis of purpose this is a declarative sentence, because its chief purpose is to give information.

b. On basis of number and relation of thoughts expressed, it is a compound sentence, because it expresses two coordinate, independent thoughts. It is a compound-complex sentence, because one of its members, the first, is complex.

2. The first member is the words, "a fool, whom no man respects, speaks all his mind," because they express the first coordinate, independent thought. The second member is the words, "a wise man reserves something until

hereafter," because they express the second coordinate, independent thought.

3. The conjunction is the word, "but," because it expresses the relation between the two coordinate, independent thoughts. The relation is one of opposition, because the thoughts expressed are in different lines, or are opposed to each other.

4. The sentence begins with a capital letter, because all sentences should begin with capital letters. It is followed by a period, because it is a declarative sentence, both in form and meaning. The members are separated by a comma, because the members are somewhat long, and the relation existing between the thoughts expressed is not very close. There is interpunctuation in the first member, but the conjunction is present, so no other punctuation mark than a comma is needed between the members. The subordinate clause, "whom no man respects," is separated from the rest of the sentence by the commas, because it is a descriptive adjective clause.

5. a. The thought subject of the first coordinate, independent thought is the idea, "a fool, whom no man respects," because it is the idea about which the mind thinks or asserts some thing. The thought predicate is the idea, "speaks all his mind," because it is the idea which the mind thinks or asserts of the thought subject. The thought relation is one of agreement, because the thought predicate belongs to the thought subject.

The thought subject of the second coordinate, independent thought is the idea, "a wise man," because it is the idea about which the mind thinks or asserts something. The thought predicate is the idea, "reserves something until hereafter," because it is the idea which the mind thinks or asserts of the thought subject. The thought relation is one of agreement, because the mind thinks of the thought predicate as belonging to the thought subject.

b. The subject of the first member is the words, "A fool, whom no man respects," because they express the thought subject. The predicate is the words, "speaks all his mind," because they express the thought predicate. The copula is implied in the word, "speaks," because it expresses the thought relation. Expanded it would read, is speaking, in which case the word, "is," would be the copula, and "speaking" the principal word of the predicate.

The subject of the second member is the words, "a wise man," because they express the thought subject. The predicate is the words, "reserves something until hereafter," because they express the thought predicate. The copula is implied in the word, "reserves," because it expresses the thought relation. Expanded it would read, is reserving, in which case the word, "is," would be the copula and the word, "reserving," the principal word of the predicate.

c. The principal word of the subject of the first member is the word, "fool" modified by the word, "A," a limiting adjective modifier, because it changes the meaning of the word, "fool," by narrowing its application. The word, "fool," is also modified by the descriptive adjective clause, "whom no man respects," a descriptive adjective modifier, because it changes the meaning of the word, "fool," by making prominent an attribute of the object of thought expressed by it. The subject of this clause is the words, "no man," of which the word, "man," is the principal part, modified by the word, "no," a limiting adjective modifier, because it narrows the application of the word, "man." The predicate is the words, "respects whom," of which the word, "respects," is the principal part, modified by the word, "whom," a direct objective modifier, because the object of thought which it expresses is directly affected by the attribute, "respects." The word, "whom," is also the connective word, showing the relation between the principal and the subordinate thought. The copula is implied in the word, "respects."

The principal word of the predicate of the first member is the word, "speaks," modified by the words, "all his mind," a direct objective modifier, because the object of thought which they express is directly affected by the attribute expressed by the word, "speaks." The principal part of this modifier is the word, "mind," modified by the word, "all," a limiting adjective modifier, because it narrows the application of the word, "mind." The word "mind," is also modified by the word, "his," a possessive modifier, because it changes the meaning of the word, "mind," by denoting possession.

The principal word of the subject of the second member is the word, "man," modified by the word, "a," a limiting adjective modifier, because it narrows the application of the word, "man." The word, "man," is also modified by the word, "wise," a descriptive adjective modifier, because it makes prominent an attribute of the object of thought, "man,"

The principal word of the predicate is the word, "reserves," modified by the word, "something," a direct objective modifier, because the object of thought which it expresses is directly affected by the attribute expressed by the word, "reserves." The word, "reserves," is also modified by the simpler adverbial, prepositional

phrase, "until hereafter," an adverbial modifier, because it expresses an attribute of an attribute. It expresses an adverbial idea of time. The relation word of the phrase is the preposition, "until," which is also the characteristic word, hence we call it a prepositional phrase. It is simple, because it expresses but one principal idea; adverbial because used in the sentence with the value of an adverb. The principal word of the phrase is the word, "hereafter."

THE THIRD GRADE IN HISTORY.

By ELLWOOD W. KEMP.

THE third-grade work in the public schools is intended to give the child such ideas of the Greeks and the way they lived as a nine or ten-year-old child is able to understand. The story of "Cleon" in the *Ten Boys* is a good thread upon which much material may be woven, but the successful teacher will not rely merely upon this story but will enrich it at every important point by a larger and fuller view. The Age of Homer, The War Between the Greeks and Persians, Greece in the Time of Pericles, How Alexander spread Greek life over the whole civilized world of his time, all have material in them which would be of great interest to children. Any one of these topics might be worked on for a month or two till the pupil had a vivid graphic picture of the time. Then take another topic, being careful at each stage to give children a clear picture before proceeding to the next step. As an example of an outline of one of these topics, the paper on "Greece in the Time of Homer" by Harry A. Miller, a student of history in the state normal school is here presented.

AN IMAGINARY JOURNEY WITH HOMER THROUGH GREECE.

(800 B. C.)

Adapted for Third-Grade History.

You all remember the last time we were in Greece, a long time before anybody lived there, and what we saw, how many mountains and hills there were and what people might do if they lived there. We are now going to visit it at a time when people lived there, and when Homer, a great, wise and good man lived.

All of Greece was not settled then, for you must know that a great nation of people is just like you are;—it has its babyhood and childhood, and as you grow and get to be men and women, so a nation must grow from childhood to old age. Well, Greece was in its childhood and we will visit it while in that condition.

Homer was a blind man who went around singing songs to the people of how they should live and what would become of them after death. He also sang many stories of how their cities were founded by great men who were now in the form of gods, and how they should honor the gods who were once in the forms of men.

Now let us join him and imagine we are traveling with him telling the story as we go.

There is a city called Delphi, that is built near where the fog arose out of the bubbling spring, near the base of the great Mt. Parnassus. To this city we went and joined Homer. It is built just below the spring, and farther up the mountain, right where the steam rises is a house built of stone, for it was here the Greeks thought a great god dwelt because the steam came up out of the rocks, and they thought this steam was the breath of the god.

This god's name was Apollo and they would ask him about everything they wanted to do. If they wanted to found a city, or explore a country, or even go to war they would ask Apollo's advice.

This temple they built to him for the same reason we build our churches in which to worship God.

Before we started on our journey we went up the mountain side to the temple and there found a beautiful woman. She told Homer that the God would be pleased with his journey if he would go through Greece singing songs of the heroic and beautiful Greeks. Then we started back down the mountain side, and on our way, met several people going up the well-beaten path to talk with the oracle, as they called it, when they talked with the god, Apollo.

The first we met was a man with flowing beard and much to our surprise he was dressed like a woman. He had a large cloak thrown over his shoulders and wrapped entirely round him with one bare arm on the outside of the cloak and the other beneath. His head was bare as were

also his feet. In his hand he carried a cane which he struck on the ground at every step. We passed up the hill and two young girls met us. One had long, beautiful hair; there were many folds in her dress which was thrown round her in much the same way as the man's cloak, except that it was fastened in front with a gold buckle; her arms were bare, and on her feet were light sandals. The other was a servant girl. She had the skin of some wild animal drawn around her, and her arms and limbs were bare. Most of the common or poor people wore skins for clothing.

How strange it seemed to see people wearing no hats or shoes! and when we asked about it, they told us that everybody went without them except some very wealthy people who lived in Athens; and in Sparta, a city farther south, the king would not allow them to wear shoes for they would be so much better fitted to march in war, being used to the hard ground, and then the Greek was taught that the gods gave him his body and he should develop it by just such exercises. The houses of Delphi were built of wood, or rude stones and were very close to the street. The doors swung outward, and one of our company came near being knocked over by some one inside opening the door of a house right in his face; he happened to hear a knock inside which they always gave when they came out of the house and dodged in time to escape the blow.

The people were all bare-headed, the men having full beards. Some women, however, had rude umbrellas to keep the sun off, but usually their flowing hair helped to do this. Every man carried a cane, for this was the custom. There were market places where they kept fruits of almost all kinds, which grew wild.

From Delphi we journeyed over the rough, but beautiful country to Athens. Often on the tops of ridges we would rest and look down into those little pockets shut in by mountains where people lived alone in these villages, for each pocket had a little level place at the bottom, but at this time only few had cities in them; because, as we said, Greece was in her childhood. We saw many herds of cattle which were watched by slaves, the farms having no fences around them, and the men who owned the land usually lived in the towns, while the slaves did the work.

On this journey we saw a funny trade. Two men each had a drove of oxen and one man wanted a large ox the other had so he offered him one of his oxen in exchange, but the other would not agree to this. As they had no money in Greece the first man offered the second an ox and a goat for his ox and the bargain was made.

We stopped to stay all night in the country before reaching Athens, and were treated nicely. The house was made of rough stone, for they had not yet learned to use the beautiful marble that was found there. It had several rooms,—one for the men, one for the women, and another for the servants, while near by was a house for the oxen and horses and another for the dog, for they thought a great deal of the useful animals.

The beds consisted of skins of animals, which were soft and nice, and for a light we had a wax candle. Before going to bed the people of the house prayed to Zeus the household god to bless us. In the morning we were given a breakfast of barley cakes and fruit, and with a second blessing sent on our way.

Everybody was at work—men herding and plowing, and women weaving in every home. They had no school, but the boys were taught to be like the wise and good men—like Homer, and often the parents would allow their boys to go around with such men in order that they might teach them to be good, and to love the gods that put them in this beautiful land of Greece. The girls were taught weaving and spinning.

We reached Athens near noon, in time to see a new king elected in the public court. The king that had served before got too old to lead in war, and then he had not prayed well to the gods, for many evils had come upon the city from time to time, and a council of men thought best to put him out and elect a new one. We got there in time to see how he was made king. The meeting was held in the court, a large, square plot of ground in front of a large building, which was surrounded by a high stone wall. We approached the court through a large gate made in an opening through the wall. A man who seemed to be speaker cried to the people that the gods favored a certain man for king, and amid shouts he was declared king. He then talked to the people about how he would ask the gods for protection to the city, and that he would do all he could to lead the armies against any enemy. We thought it a queer way, indeed, to elect a king

The people held a festival and public dance that night. Men played on large stringed harps called lyres, and the people danced. The girls wore linen, and with them were slaves bearing wreaths of flowers, for there were many beautiful flowers in that warm, sunny land. The young men wore cloaks, or chitons, with beautiful trimmings. Large goblets of water and wine were there, and on the outside of the goblets were pictures of Bacchus, the god of wine. They got these beautiful vases from Phœnicia.

We stayed in Athens many days, and while

there we attended court. A man had been accused of murder. He was questioned by several men and confessed that he was guilty. After talking about it for some time the council agreed to send him to the island of Sirens, where many beautiful singers lived and when you sailed near enough to hear them, you could not help going to them on account of their sweet music. After you were there you were devoured alive, and no one ever returned from there except Odysseus, who filled his ears with wax and did not hear them. The Greeks believed such stories, so he was sent there.

While here Homer sang to the people about how the city was founded, and how they should honor these men who were then in the form of gods for protecting them.

He also told them that the first city founded was by the Egyptians, and that the Egyptians and Phœnicians were kin to them because the Greeks came from there long, long before.

When the sea would swell into angry waves and scare the sailors, they thought it was the work of Poseidon, the sea-god who dwelt in a house of sea-shells and pearls at the bottom of the sea. Their gods, they thought, were in the forms of men, but much larger, stronger and more beautiful than men. They believed that everything had a soul and a god; but Homer did not believe this, and stopped on the streets several times to sing to the people that there were no gods except in the forms of men, that they had but grown larger and more powerful and would help the people.

On our way to Sparta, which is over on the maple leaf, in a river valley called the Eurotas we saw a crowd of people gathered together. They had killed a large ox and were burning it and offering prayers to Ceres the goddess of harvest because they had raised plenty of corn and grapes the past year.

We asked a man if he had any relative living near, and he said all the Greeks were kin. That they all had the same father who lived a long time ago away across the Ægean Sea. Of course we did not believe this, but the Greeks did, firmly. He also told us that they all worshipped the god of light, Apollo, the one Homer talked to at Delphi, and that made them brothers. He did not know the people who lived in Athens but said all those living in the valley belonged to the city of Sparta.

After reaching Sparta the people did not seem to listen so well to Homer's songs. They seemed to be more interested in their crops of barley and corn and herds of cattle than his stories, and some even spit in his face. We visited the king and he treated us kindly. He worked in his garden while the queen worked at the spinning-wheel. It seemed strange that a king and queen should work, but everybody did. No one was idle and everywhere we went we noticed how cheerful and active the people were, and what splendid forms they had, especially the young men, who were straight and walked with a brisk, quick step. They would make good warriors, we thought.

Before we left Homer we asked him what his people thought about the future after death, and he said that life was full of beauty to the Greek but death was a dreadful thing. He said the body must be burned and then the soul would be free. It would then have to cross a dark, deep river, beyond which was a beautiful meadow full of flowers. If he had been good, he would be taken safely across the dark river, but if he hadn't, he might have to wait one hundred years to get across, and suffer and wander in darkness. Then he told us a story of a man who had been very mean, and when he died he went to the other world, where he was placed in water up to his chin, and when he was very thirsty and would stoop to drink, the water would disappear. Above him hung delicious fruits, but when he grasped at them the wind would blow them out of his reach.

When a man was good on earth he lived in a land of sunshine and flowers after death. Now we will say good-bye to Homer and Greece after such a pleasant journey, and visit it again long after Homer is dead and gone to the beautiful meadows he talked of so much.

River and fountain, brook and rill,
Bespangled o'er with livery gay
Of silver droplets, wind their way.
All in their new apparel vie,
For Time hath laid his mantle by.

—*Charles of Orleans*

PRIMARY.

EDITED BY

FLORA J. COOKE, Chicago.

NUMBER IN THE PRIMARY GRADES.

"Mathematics is neither foreign to actual life nor something deduced from life; it is the expression of life as such, therefore its nature may be studied in life, and life may be studied by its help."

Theoretically, most teachers would agree with the foregoing quotation from Froebel, as it is given with its logical explanation in his *Education of Man*. Practically, however, no one has fully applied this doctrine in the teaching of arithmetic.

The solemn isolation which long sustained custom has given mathematics in the course of study, has awed us, one and all, into condemning the children to formal drills and the dreary learning of unintelligible rules and definitions.

The following examples selected from the year's work of a class of primary children, indicates a continued though crude attempt to use number only for its true purpose, *to make necessary mental images clearer*. But, as the children are *constantly* imaging, comparing, analyzing and judging, the number element comes consciously or unconsciously into all the work. If the work is planned from the childrens' own needs, and with the desire to secure, systematically, their best efforts, it will continually present difficulties in the form of new processes or facts which will have to be overcome before the desired images can be gained. This is the true place for drill, as much or as little as the children may demand to help them to overcome the obstacle.

Interest, and the feeling of necessity for the end in view, secure economy of effort and the least possible amount of drill. In the science work they are constantly measuring, weighing and comparing the quantities which they use in their experiments. They construct charts, estimate amounts, and keep records concerning the sunshine, temperature, wind, rain, etc. These, with the help of their pictures of the changing landscape, fill in for each child individually the picture of the season and its characteristics.

By the making of apparatus, useful articles for home and school, the Christmas work and valentines, the models of primitive shelters, tools, etc.,—by *always stopping* at the *first difficulty* until the obstacle is overcome,—the children acquire through actual use certain units of measurement,—standards of judgment—as the foot, pound, square inch; in lines, weight, area, volume, time, etc. They also practically master the facts within the number twelve, in whole numbers and fractions, in addition, subtraction, multiplication, and division. They are, however, in no sense limited by the number twelve. The image, which it is *necessary* to gain—which, therefore, could not be beyond the child's power of comprehension—alone determines the size of the the number used.

It is the teacher's duty to judge what the children will care to measure *definitely*, and what is worthy of their efforts. She must look to their *fundamental interests* for help. The following work in meteorology might well be criticized as being too analytical for little children, because the motive for the selection of this work and the great variety of devices attending the study are not given. Some of the children got nothing from it, but the *habit* of looking daily with pleasure at the sky, water, plants and animals in their environment, but surely such observation was not wholly without good effect, the work provided opportunity in almost every line of activity which children enjoy. They made and regulated their own weather signal-flags, rain-guages, etc. They expressed their observations by means of writing, drawing, painting colored crayon illustrations, plays, dramatic personification, original stories, etc. Selected stories, poems, songs, rhymes and riddles constantly allowed the same things, in another form, to act upon them and the test of the value of the work came in the children's increasing delight in and their desire to know more about these familiar things.

The following outline presents the number aspect of the work in meteorology for an entire year:

. TEMPERATURE.—The children judged that it was cooler in the shade of trees and in the house than in the sunshine. To verify their judgments the use of the thermometer as a tool for measuring heat was necessary.

The numbers and lines upon the thermometer may be read: zero, 1 ten, 1 ten and 2, 1 ten and 4, 1 ten and 6, 1 ten and 8; 2 tens, three tens and 6; 4 tens, and the names twenty, thirty, forty, etc., reviewed until the children are perfectly

familiar with their meaning. This makes the reading of the thermometer perfectly simple.

The children recorded the outside temperature and that of the room at a given time every day. They discovered that the temperature of the soil at a certain depth where the ants live, where the earthworms live, and in the garden, where the vegetables live. They compared the temperature under their trees with that in the sunshine, that of the water at the surface with that at the depth where the fishes live.

The record of all these experiments was kept upon a large chart, and used for reference by the children. At the end of each month they were able to construct simple charts for their individual records—a series of parallel lines with dots at regular intervals were drawn to represent the scale of the thermometer by tens. At the 32 point and at the zero point lines were drawn all the way across the chart. At the top of each line stood the number indicating the day of the month, and above all stood the name of the month. By connecting the temperature recorded at, say 9 A. M. one day with that on succeeding days the record was completed.

These data were gathered by the children and recorded daily at 9 A. M. The children noted the direction of the heat line in each case. They compared these charts with their paintings of landscape, plants and animals during these months, also with the data of their sunshine charts. In many cases the children immediately discovered the relation between the descending heat line and the changes which they had recorded.

TEMPERATURE CHART.—The children constructed a chart upon which they recorded the number of clear, fair, cloudy, rainy and snowy days in September, October and November. They obtained the data from their large schoolroom charts which were the results of their own daily observations. Upon these charts the clear days were represented by bright yellow circular disks, the fair days by dull yellow, the cloudy days by dull gray, the rainy days by dark gray, the snowy by light gray. The disks were all of a uniform size. They were cut and pasted upon the chart in such a way as to show plainly, through the different coloring, the changes in each day and thus in each month. Frost was represented by a small white circle. Each month's chart was the size of the leaves of their books—11 by 8½ inches. After a half-inch margin was taken off from one end and side, the space was divided into three equal parts—one for September, one for October, and one for November.

The children made a working plan upon the blackboard before using the material designed for the chart. They divided each month's space into four equal parts—one for clear, one for cloudy, one for fair and one for rainy and snowy weather.

They counted up the entire number of days of sunshine in each month—fair, cloudy, etc. With their self-made circle-makers they constructed the necessary number of circles in each column, to represent the number of clear, fair, cloudy, etc., days in each month. They painted these circles the colors of the disks upon the large charts; they experimented in mixing the paints, under the teacher's direction, until they got the exact representative colors.

When any (normal) child found difficulty in counting up the number of clear days—that is, if the adding or combining of the fractional parts of the disks troubled him, the teacher stopped and allowed all the class to help the child overcome his difficulty. As many devices were used and as long a time taken as was necessary to make the work perfectly clear to him. Through this work the children had vividly impressed upon them, with the help of the landscape painting, temperature charts, etc., the general characteristics of the fall months. For instance: September had only four cloudy school days, while November had ten and one-eighth. September had twice as many clear days as November. In September the heat line did not come nearer than 12° of the freezing line. In November it was one-fourth of the time below it. September with green grass, green leaves, many flowers, birds and insects. November, the grass withered, the trees bare, few birds, no flowers and no insects. And thus, as many of his images combine constantly into an ever expanding image, the child unconsciously grows to feel the relative importance and interdependence of these things, and his own relation to all.

During the spring months the children were given the opportunity of expressing their observations through the medium of their newly acquired power in the use of a *printed* vocabulary. This had the advantage of requiring them to express themselves, individually and independently, as they searched out the sentences which they thought corresponded to the weather conditions, and arranged them upon their disks in such a way that they might be easily read and compared.

This tested not only the accuracy of their observations but their power to recognize and associate correctly *ideas* and their appropriate *symbols*. It also created a *real necessity* for *read-*

ing, too often absent from exercises of this nature.

The children needed a receptacle of some kind to hold the words and sentences used in this work, and the following box was chosen as the most convenient form for it:

WEATHER BOX.—(dimensions in inches). Nine small boxes 4x1x1, one large box to hold the small boxes 12½x3½x1. The small boxes were labeled "Day of Week," "Months," "Wind," "Clouds," "Temperature," "Rain or Snow," "Frost or Dew," "Dates," and contained sets of sentences upon the subject indicated by the label.

The history work and the other lines of nature study required quite as much number work for clear picturing, and the only question seemed to be the necessity to the child for gaining so definite a picture in a given subject, and I think this can be tested only by noting how *actively* it goes into its immediate life; that is, by how much he needs to use, and so find valuable, the results of his work.

COMPOSITIONS FROM HAWAIIAN SCHOOLS.

SCHOOL.

When children are in Chinese school, they study out loud. They study geography, writing, drawing, and counting.

When they spell, they turn their backs to the teacher. If they spell wrong the teacher tells them to go to their seats, and study again.

The children must mind their parents. If they do wrong, their father and mother will tell them not to do so. If they do it again, then their parents will punish them.

Our Sunday school has several classes. We read the Bible.

Idol worshipers and Christian people are different because idol worshipers do not know about God.

GOO, SEU YUEN, age 11.

THE PAPAIA.

The papaia fruit's form is oblong and its color is orange, but when it was young its color was green.

When we cut off a piece of the papaia fruit it had some juice and a plenty of seeds inside of it.

The color of the juice was white, and the shape of the seeds was just like the papaia shape.

And when we broke open the transparent inside of it, the color was black, and it had some spikes which grew on it.

Papaia fruit is pungent and to me was not very bad, but some others can't smell it.

When I ate a piece of it I felt all right, but some others, when they ate a piece of it had a headache or they couldn't swallow it down.

But the papaia fruits are good for health and better than the other fruits like mangoes.

AH YUK, 3d Grade.
Normal Practice School.

OUR SCHOOL.

Our school is on Miller street, on the slope of Punch Bowl.

In our yard there are three buildings, the Primary and our school and the Press room. We have a Japanese carpenter on our yard making a new gate.

We have many trees. The names of some are date palm trees, mango trees, kukari trees and many other trees. We have a big yard and nice green grass and we always have a nice time. We had swings in our yard to swing ourselves on, but they fell down. We play very much, we play ball, and we play hide and seek.

ALEXANDRIA PHILLIP.
Portuguese Mission School, 2d grade.

WHEN I WAS A BOY.

Up in the attic, where I slept,
When I was a boy, a little boy,
In through the lattice the moonlight crept,
Bringing a tide of dreams that swept
Over a low, red trundle bed,
Bathing the tangled curly head,
While the moonbeams played at hide and seek
With the dimples on the sun browned cheek—
When I was a boy, a little boy.

And oh, the dreams—the dreams I dreamed
When I was a boy, a little boy!
For the grace that through the lattice streamed
Over my folded eyelids seemed
To have the gift of prophecy
And to bring the glimpses of time to be
When manhood's clarion seemed to call—
Ah, that was the sweetest dream of all
When I was a boy, a little boy!

I'd like to sleep where I used to sleep
When I was a boy, a little boy!
For in at the lattice the moon would peep,
Bringing her tide of dreams to sweep
The crosses and griefs of the years away
From the heart that is weary and faint today
And those dreams should give me back again
A peace I have never known since then—
When I was a boy, a little boy!

—*Eugene Field.*

MUSIC.

EDITED BY

J. G. CRABBE, Ashland, Ky.

ADAPT THE MUSIC TO THE CHILD.

A plan of music for the child—and for the teacher as well—should be more than a logical development of the science of music. It should be psychological in its adaptation to the development of the child, appealing in the highest degree to every quality of mind and heart. And does it not seem that inasmuch as the child's intelligence and independent power grow by observation from memorizing and imitating, that his training in music should begin with songs committed to memory and related in construction and thought to sight reading exercises and studies? If the power of song is to be used as a starting point and the child's efforts at musical understanding are to be prompted by the inspiration of song, it follows that only the very best songs should be selected; the character of the material itself is of first importance.

WHY STUDY MUSIC?

The value of education to the individual must be found in its effect on the soul; in its influence as an element in character-forming. No consideration of ultimate values is adequate unless it weighs the well-being of the immortal part of man. As educators we assume that the formation of worthy character is the ultimate object of all education. . . .

Music is of the highest value in education, because it supplies in an attractive and effective manner the very elements that are so often wanting in modern life. The average American boy is born with the notion that the most important thing in the world is to make money; that all his time should be given to preparing himself to work for wages: and that if he does prepare himself to fill a position that will bring him a livelihood, he is doing all that should be expected of him, In other words, he places the skill of his eyes or his hand above his own worth, and makes what he can do of more importance than what he is. . . . I take the position that music educates the child, not to make him bring a higher price in the labor market, but to make him a broader, better man in mind and heart. . . . The things that really move and mold humanity are, after all, the things that touch the common heart and lay hold of the great common feelings of mankind.

Nothing that is the common property of man does this so completely as music. The exact character and influence of its operation can be explained no more than you can exactly explain the influence of a noble picture, of a garden of beautiful flowers, of a park of lofty forest trees, or of a grand outlook whence may be seen the glories of a lovely sunset, or of a broad stretch of river and forest and landscape. . . . All the lessons in all the books are not so important as to learn to live happily, drawing pleasure from the free gifts of the universe. Teach a child to love the sun and the breezes, the sunset and coming of the night bringing the moon and the stars, all the beautiful gifts of God, and you make this world an abode of happiness, and his life a benefaction to himself and his fellows.

It is this element of nature, this message from the heart of God, that music puts into the school course, puts into the church service, and puts into the home. You can not tell what this element is nor describe its working, but we all feel it swaying our emotions, speaking for our heaven-given intuitions, appealing to the best that is in our beings.—*P. C. Hayden at N. E. A.*

Music is what awakes in you when instruments are played.—*Whitman.*

MUSIC IN EDUCATION.

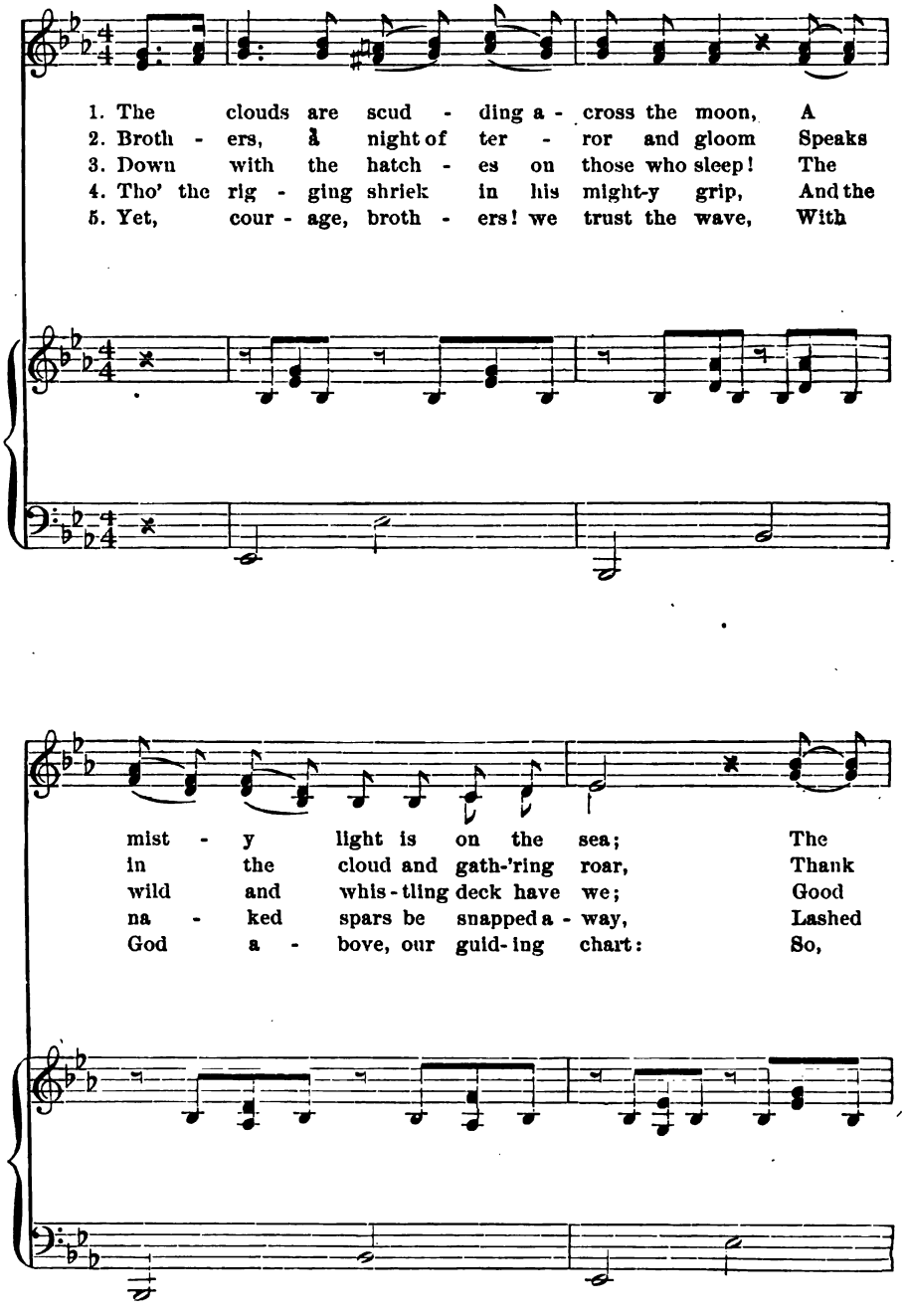
One of the best things a musician can do for his art is to bring before the people the position that music should occupy in the general scheme of education. Music stands as the representative of the esthetic life in general. The world at large often gives to the term "education" in general the meaning of simply a collection of facts and theories, to the neglect of the esthetic sense. But when we exploit the real place of music in the scheme of education, we are opening the way for all that goes to make up a higher and better esthetic life.—*The Etude.*

When he is old and past all singing,
Grant, kindly Time, that he may hear
The rhythm through joyous nature ringing,
Uncaught by any duller ear.

—*H. C. Bunner.*

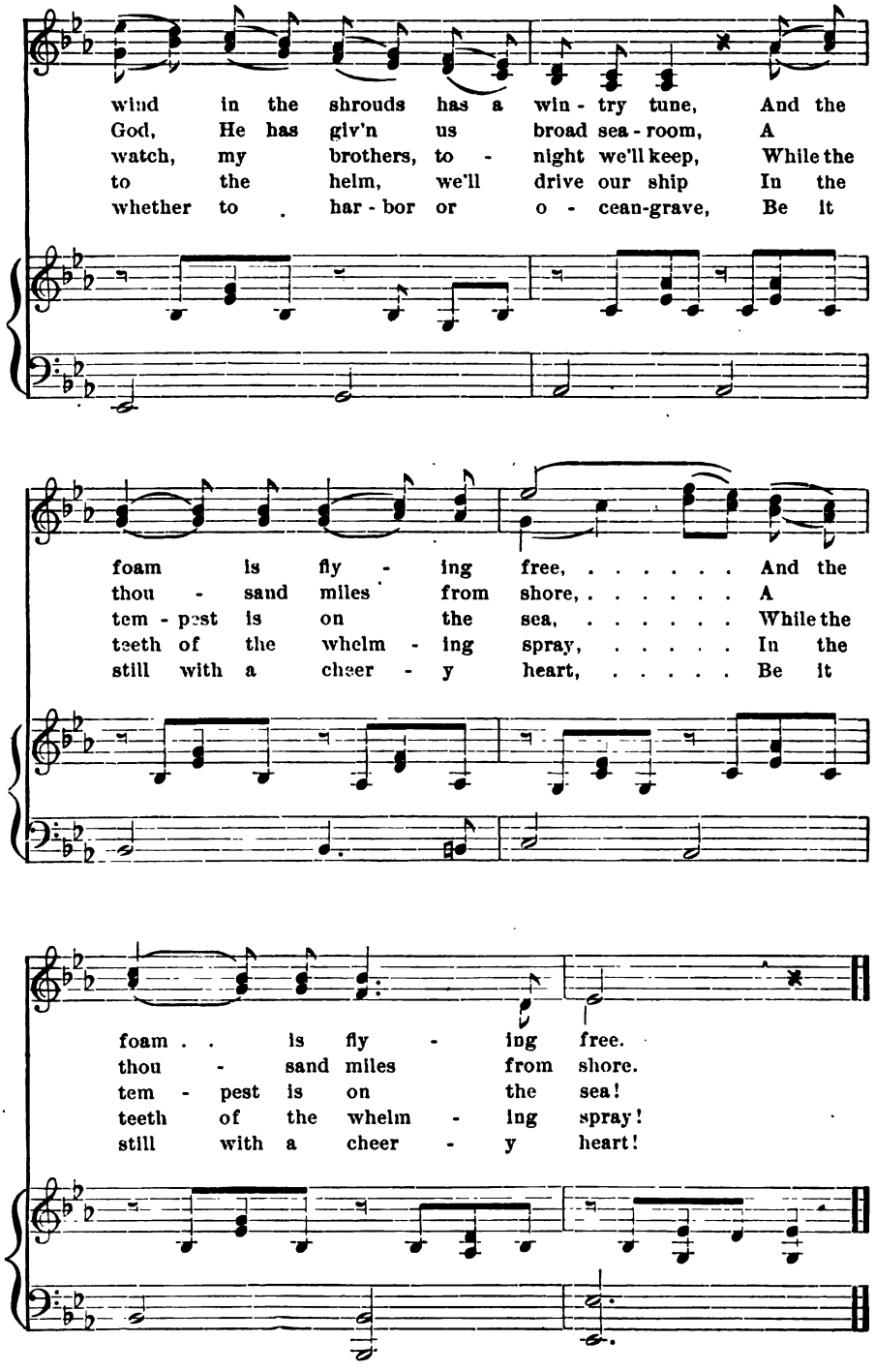
THE STORM SONG.

Bayard Taylor. Arr. from Christoph Willibald Gluck.



From *The Riverside Song Book*, by permission of, and arrangement with, the publishers, Houghton, Mifflin & Co.

THE STORM SONG.



MATHEMATICS.

EDITED BY

ROBERT J. ALEY, Ph. D., Bloomington, Indiana.

HISTORY OF ARITHMETIC.

XX—THE CALENDAR.—(Continued).

The mistake of Numa's reign was finally corrected by an edict which commanded that every third period of eight years, instead of having four extra months should only have three of twenty-two days each. This made the average year 365¼ days each. The announcements and arrangements of the extra months were left to the pontiffs. With the usual corruptness of the times, the extra months, Mercedimii, were hurried or retarded as might best suit the ruling pontiff. At the time of Julius Cæsar the calendar was three months wrong.

Cæsar decided to take a new start. He decreed that the year should consist of 365¼ days. This was to be accomplished by making the ordinary years consist of 365 days, and every fourth year of 366 days. The new reckoning began January 1, 45 B. C. The months of January, March, May, July, September and November, each consisted of thirty-one days, and all the others of thirty except February which had twenty-nine in ordinary years, and thirty in leap years. August was increased to thirty-one to gratify the vanity of Augustus. In order to prevent three long months in succession, September was reduced to thirty days, then November was also so reduced, and October and December, increased to thirty-one days. The extra day for August was taken from February.

The Julian year was too long by about eleven and one-fourth minutes. This amounted to a whole day in about 128 years. Some unknown Persian astronomer suggested that the extra day in every thirty-second leap year be omitted. Had this suggestion been followed, it would have reduced the error to less than one day in 100,000 years. It is worthy of mention that Losigenes, the mathematician who made the calculations for Julius, knew that his rule made the year too long.

The error in the Julian calendar accumulated until in the sixteenth century it amounted to about ten days; that is, the seasons arrived ten days earlier than they should. In 1582 Gregory XIII. corrected this by omitting ten days from that year, and decreeing that the even centuries should be leap years only when divisible by 400. This made the year contain 365.2425 days. The error in this is so small that it will take about 3,300 years for it to amount to one day.

The new calendar met with much opposition. Roman Catholic countries, in general, adopted it at once. The change was not made in England until 1752, when it was necessary to omit eleven days from that year. Scotland made the change in 1600, and the German Lutheran States in 1700. Russia and the Greek church still adhere to the Julian calendar.

All Mohammedan countries use the year of twelve lunar months, or 354⅓ days. Such a year, of course, has no connection whatever with the seasons.

The Gregorian change in the calendar was not made for scientific reasons, but solely to keep Easter at the proper season of the year. In 325 the Nicene council decreed that Easter Sunday should be the first Sunday after the first full moon next following the vernal equinox. It was very important that the church all over the world should celebrate Easter on the same date. It is also important to know in advance what that date is to be. Many mathematicians have worked out rules by which the date of Easter can be determined. The best rule is that of Gauss corrected by Delambre. The rule for the next 200 years is as follows: (1) "Divide the given year by 4, 7, 19; and let the respective remainders be a, b, c. (2) Divide 19c+24 by 30; and let the remainder be d. (3) Divide 2a+4b+6d+5 by 7; and let the remainder be e. Then, if d+e is not greater than 9, Easter Sunday will be on (22+d+e)th of March; and, if (d+e) is greater than 9, Easter Sunday will be on (d+e—9)th day of April, unless d=29, e=6, in which case Easter Sunday will be on April 19, and not on April 26, or unless d=28, e=6 and c>10, in which case Easter Sunday will be on April 18 and not on April 25." For the year 1900: a=o, b=3, c=o, 19c+24=24, and d=24. 2a+4b+6d+5=161, and e=o. d+e=24, which is greater than 9, hence Easter is the (24—9)th=15th of April. The two exceptions to the general rule mentioned above will occur in 1954 and 1981.

SHORT CUTS—IV.

MULTIPLICATION.—(Continued).

15. To find the product of two numbers which differ by 2. From the square of the intermedi-

ate number subtract 1; the remainder is the product sought; e. g., $59\times61=60^2-1=3599$. $84\times86=85^2-1=7224$.

This method by reversal may frequently be used to advantage in squaring numbers; e. g., $59^2=58\times60+1=3481$.

16. In multiplying large numbers, advantage may frequently be taken of multiples in the multiplier. This is readily seen in the following example:—

765374
36189

6888366
13776732
27553464

27698119686

First, the multiplicand is multiplied by 9, then this product is doubled to give the product of the multiplicand by 18, and then this last product is doubled to give the product of the multiplicand by 36, proper attention being given in each case to the position of the partial products. This method is of frequent application, and insures greater accuracy than ordinary multiplication.

17. To square by supplement or complement. The supplement of a number is its excess above the next lower number of tens; e. g., 4 is the supplement of 64; 3 is the supplement of 83, etc.

The *complement* of a number is the difference between the number and the next higher order of tens; e. g., 1 is the complement of 49; 2 is the complement of 68, etc. The *base* in each case is the number of tens considered.

To the number to be squared add its supplement, multiply the sum by the base and add the square of the supplement; e. g., $63^2=(63+3)\times60+3^2=3969$. $84^2=(84+4)\times80+4^2=7056$.

From the number to be squared subtract its complement, multiply the difference by the base and add the square of the complement; e. g., $49^2=(49-1)\times50+1^2=2401$; $87^2=(87-3)\times90+3^2=7569$.

The principles of this method may be easily extended to many examples in multiplication. The following problem will illustrate an application:

98 . . . 2 } complements.
97 . . . 3 }

For the two final figures of the product, take the product of the complements, supplying a zero if necessary, and for the other figures of the product subtract either complement from the other number. This gives the product at once as 9506.

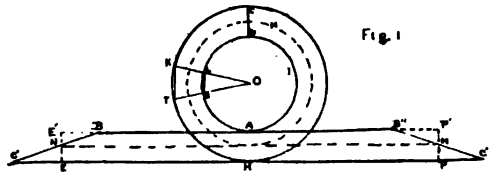
e. g. 96 . . . 4 } complements.
97 . . . 3 }

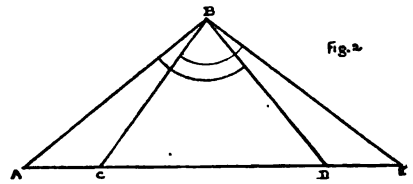
9312

The interested reader will at once see many applications.

SOLUTIONS.

NOTE.—Kindly send communications for this department to Robert J. Aley, Bloomington, Ind., and not to Terre Haute.





Prob. 23, page 327. This problem has been solved in these columns, but John S. Williams of Mt. Vernon sends so good a solution that we gladly give it space. The problem reads, "At what point shall a triangular board 12 ft. long and 12 in. wide, be sawn into two equivalent boards?" The larger circle has a radius of 12 ft. If the inner circle is just one-half as large as the outer, then the triangle O L S will be just one-half the triangle O K T. (Fig. 1.)

$12^2\times3.1416=452.3924$ area of larger circle.

$452.3924\div2=226.1962$ area of smaller circle.

$\sqrt{226.1962\div.7854}=16.96+$ diameter of smaller circle $16.96+\div2=8.48+$ radius of smaller circle, and so the point of section of the triangle. Mr. Williams also sends a similar solution to the 24th problem on page 327.

Problem 33, page 327.

A road two rods wide about a circular field contains one acre. What is the area of the circle?

2 rods=width of road.

1 a. or 160 sq. rds.=area of road.

$160\div2=80$ rds., average length or length of middle M′. (Fig. 1.)

80 rds. $\div3.1416=25.464+$ rds., diameter of M′.

Diameter of I is 2 rods less than dia. of M′.

$25.464+$ rds. -2 rds. $=23.464+$ rds. dia. of field, I.

$23.464+^2\times.7854=432.41+$ sq. rds. Area of field.

432.41+sq. rds.÷160=2 acres, 112.4+sq. rds. Area of field.

FOREST STEWART, Winterville.

A second solution.

Cut the figure at C B and let it take the position below. Fold triangle E C′ N over on N B′; and triangle P C″ M over on M B″ P′. Now we have the rectangle E E′ P′ P.

E E′ P′ P=160 sq. rds, 160÷2=80, length of rectangle in rds.

But this 80 rds. is the distance from N to M or it is the dotted circle, midway between the other two circles.

80÷3.1416=25.783+rds., diameter of dotted circle.

The diameter of the dotted circle is two rds. greater than that of the inner.

25.783—2=23.783 rds., diameter of inner circle.

$(23.783)^2$=565.631 sq. rds.

565.631×.7854=444.246 sq. rds.

444.246÷160=2.71+A.

J. E. HOFF, Carroll, Ind.

Poblem 16, page 118.

Harry Yohey, aged 11, grade 5, Shideler, Ind., sends the following excellent solution:

"A and B can do a certain piece of work in $12\frac{2}{3}$ days. They work together $6\frac{4}{5}$ days. A then left, and B finished the work in $8\frac{1}{3}$ days. In how many days could each do the work alone?"

$12\frac{2}{3}$ da.=the time A and B can do the work.

$6\frac{4}{5}$ da.=the time they work together.

$12\frac{2}{3}$ da.—$6\frac{4}{5}$ da.=$5\frac{13}{15}$ da.=the time it would take A and B to finish it.

If it takes them $5\frac{13}{15}$ da. to finish it, they would do in 1 da., $1\div5\frac{13}{15}=\frac{15}{88}$ of it=what they do in one day working together.

If it takes B $8\frac{1}{3}$ da. to finish it, he will do in 1 da. $1\div8\frac{1}{3}=\frac{3}{25}$ of it.

$\frac{15}{88}-\frac{3}{25}=\frac{3}{88}$ what A can do in 1 da.

$\frac{88}{88}$ all the work$\div\frac{3}{88}=17\frac{2}{3}$=time A will finish it working alone.

$8\frac{1}{3}$ da. time=B will finish it working alone.

$12\frac{2}{3}$ da.=all the work.

$12\frac{2}{3}\div5\frac{13}{15}=\frac{22}{44}$ part to finish.

The whole=$\frac{22}{44}\times17\frac{2}{3}$ da.=38 da.=time for A to do all.

The whole=$\frac{22}{44}\times8\frac{1}{3}$ da.=19 da.=time for B to do all.

SOLUTIONS REQUESTED.

(7).

In fig. 2, p. 83, A B=40. B E=50. C D=30

$\angle A'' B D''=\angle C B E=90°$

Find A E.

(8). Three equal circles touch each other and enclose one acre. What is the diameter of one of the equal circles?

(9). A field is 40×80 rods. How wide a strip must be plowed around the field to contain half its area?

(10). Solve problem 100, page 197.

(11). Solve problem 3, page 297.

(12). Solve problem 8, page 298.

Volume of an Ellipsoid.

A correspondent asks for a rule for finding the volume of an ellipsoid. An ellipsoid is a solid whose horizontal and vertical sections are ellipses. It has three diameters which are mutually at right angles to each other. These diameters are represented by 2a, 2b, and 2c. The formula for the volume is $V=\frac{4\pi abc}{3}$ (where $\pi=3.1416$).

CORRECTIONS.

The answer to prob. 9, page 38 should be 445 bu., 2 pk., 3 qt. $133.68.

The answer to prob. 14, page 152 should be 1 mi., 6 rd., 4 yd. } 2 " 8 " 5 " }

The answer to prob. 13, page 159 should be $113\frac{7}{16}$ T.

The answer to prob. 34, page 253 should be $2057\frac{1}{7}$ bu.

The answer to prob. 8, page 300—by changing 8% to 7% the answer is correct.

The answer to prob. 31, page 327 should be 58.8.+

The answer to prob. 35, page 327 should be 4.83.+

HOW TO MAKE MATHEMATICS INTERESTING.

To all who love mathematics the title of this article will seem like a paradox. To them the subject is so interesting, fascinating even, that than can not understand why it should require any effort for any one to be interested.

In mathematics, as in all subjects, there is a certain amount of drudgery that to many is very uninteresting. This drudgery is the price the gods charge for admission to the temple. It is very desirable to make the period of drudgery as interesting as it can be. To that end the following suggestions are made:

1. Arouse the curiosity of the pupil and encourage him in his desire to get into the temple.

2. In mechanical work teach him *short cuts*, and encourage him to be constantly on the lookout for them.

3. Incidentally tell him some of the history of

the subject, and give him interesting glimpses of the lives of some of the great men who have made mathematics.

4. As early as possible introduce him to the practical side of the subject.

5. Allow occasional diversion by introducing some of the queer things of the science.

6. Plan the work of the class so as to secure mental alertness.

7. Make a careful study of every lesson and thus be able to put fire into the teaching of it.

"A child's seeming stupidity, in learning arithmetic, may, perhaps, be a proof of intelligence and good sense. It is easy to make a boy who does not reason repeat, by rote, any technical rules, which a common writing master, with magisterial solemnity, may lay down for him, but a child who reasons will not be thus easily managed; he stops, frowns, hesitates, questions his master, is wretched and refractory, until he can discover *why* he is to proceed in such and such a manner; he is not content with seeing his preceptor make figures and lines on the slate, and perform wondrous operations with the self-complacent dexterity of a conjurer; he is not content to be led to the treasures of science blindfold; he would tear the bandage from his eyes, that he might know the way to them again."

NOTES.

The American Book Company have added to their large list of mathematical books, the mathematical publications of Harper Bros. This gives the Company a number of books which have already won an enviable reputation.

Professor George W. Jones of Cornell University has issued a handy edition of his *Fire-Place Logarithms*. The tables are clearly printed and very conveniently arranged. The number of minor tables is large and the selections good. Natural logarithms, weights and measures, mathematical constants, square and cube roots and reciprocals, are among the important minor tables given. This book and other books on algebra and trigonometry are published by the author at Ithaca, N. Y.

Dr. E. W. Rettger of Indiana University has just published in pamphlet form his Doctor's Thesis, *On Lie's Theory of Continuous Groups*. This paper makes a very distinct contribution to the theory of groups. It was first published in the *American Journal of Mathematics*.

J. F. Millis continues as principal and teacher of mathematics in the Covington high school. He succeeds in arousing much interest among his pupils in the *bewitching science* of mathematics. A very successful mid-winter commencement was held a few weeks since.

The Maine *Farmers' Almanac* for 1900 contains very full and accurate astronomical data. It contains neither advertisements nor jokes, but instead has many bits of wisdom, and much desirable information. The collection of charades and riddles is large and interesting. A number of good mathematical questions are proposed. Charles E. Nash, Augusta, Maine, is the publisher; price 10 cents.

The friends of the mathematical department of Indiana university will be pleased to know that the fine library owned by the department passed through the recent fire without the loss of a single volume. The bindings of some of the volumes were damaged by water, but no books were burned. The fine case of models and the surveying instruments also escaped injury.

On account of the short time between the appearance of THE EDUCATOR and the time of going to press on the next issue it seems best to allow one issue to intervene between the questions for solution and their solutions. The questions proposed in the February number will be answered in the April number.

No. 2, Vol. II, of the "New York Teachers' Monographs" is devoted to *Arithmetic*. The Monograph was prepared under the direction of James Lee, associate superintendent of the schools of New York City. The 130 octavo pages are teeming with good things. A list of subjects and writers will give a good idea of the contents. They are as follows:—

Number Work in Primary School, by E. D. Farrell, Associate Superintendent, N. Y.; Arithmetic in the Primary Grade, by Geo. E. Atwood, Newburg, N. Y.; Number Work in the Kindergarten, by A. Grace Gibson, Public School 159, New York.; Primary Arithmetic, by W. W. Speer, Assistant Superintendent Chicago Schools; Underlying Principles, by Seth T. Stewart, Associate Superintendent N. Y. Schools; Industrial Applications in the Grammar School, by J. H. Wade, Principal School 23, N. Y.; Oral Arithmetic, by A. Sabin, Assistant Superintendent Chicago Schools; The Problems and Fractions of Grades 4 A—6 A, by Dr. B. C. Magie, Principal School 18, N. Y.; Denominate Numbers in the Fourth and Fifth Years, by Wm. J. O'Shea, Principal School 75, N. Y.; Decimals, by M. A. Bailey, Teachers' Training School, N. Y.; Arithmetic in 6 A Grade, by Superintendent Frank H. Hall, Jacksonville, Ill; Arithmetic of

Grade 6 B, by J. P. Conroy, Principal School 39, N. Y.; The Arithmetic of the 7 A Grade, by F. H. Allen, Potsdam State Normal, N. Y.; Metric System, Exchange, Proportion and Percentage, for Grade 7 B, by Dr. D. E. Smith, Principal Brockport State Normal; Arithmetic in Grade 7 B, by Albert Shiels, Principal School, 125 N. Y.; The Psychology of Number, by S. T. Badanes, School No. 21, N. Y.; Arithmetic in the Course of Study, by James Lee, Associate Superintendent, N. Y.; Jack's Work in Play, by Mary C. Cunningham, School 75, N. Y.

The Monograph may be secured by any teacher who will send 25 cents to the New York Teachers' Monograph Co., Rooms 30-32, 2 West 14th street, New York City.

Linneus Hines, who for the past five years has been teacher of mathematics in the Evansville high school, has recently resigned to accept a like position in the Manual Training high school of Indianapolis. Mr. Hines is a scholarly, cultured gentleman, and a teacher of rare ability. He will give additional strength to the very strong mathematical faculty already in the Manual Training high school.

"ORGANIC EDUCATION."

Editor Inland Educator:

DEAR SIR:—The communication of Mr. Pratt with reference to *Organic Education* may make interesting a few lines from one who has seen the ideas of the work exemplified, to some extent, by the author in the Washington school of Detroit.

I do not understand that the author advocates the ideas on the ground that they represent a system perfected in every detail, beyond need of modification. She is too genuinely interested in attaining the best in educational methods to persist in her views if, after fair trial, the results do not warrant their adoption. To me it seems a matter for congratulation that the profession have an opportunity to learn something of the workings of a school which has delighted many eminent educators.

Pages upon pages of journal discussion will not establish the real merit of the suggestions made. The schoolroom alone will do this. My observations of the Washington school enable me to say:

1. The pupils represented many nationalities, and came from a large variety of homes.

2. The needs of individual pupils were given unusual attention.

3. Ethical ideas were inculcated to an unusual extent.

4. The atmosphere of the school was delightful, the relation between pupils and teachers being well nigh ideal.

5. From the standpoint of the teachers of the school:

(a) The nineteen teachers were in hearty and sympathetic cooperation with the principal, and some of them have expressed to me the opinion that the results surpassed the results of their efforts put forth in the past under other methods.

(b) The work of teachers who have gone from the Washington school to other schools has given excellent satisfaction. I have in mind three such teachers in one school. Here a principal of recognized ability refers to these teachers as very superior, judged by the result of their work with pupils.

6. From the standpoint of the pupils:

(a) The 746 pupils of the school exhibited an interest in their work which was immediately noticeable.

(b) The results shown in the ability to express themselves in correct English, and the classroom work in mathematics, geography, writing and spelling would compare favorably with the results and work in similar lines in any school in the city.

(c) The pupils who were graduated and who entered the high school made a good showing in that school.

7. From the standpoint of the patrons of the school: I know of no instance in which parents, residing in the district, requested a transfer for their children to another school because of dissatisfaction, while I do know parents who moved into the district in order that their children might be entitled, without special favor, to the privileges of this particular school.

Has Mr. Pratt put in practice the suggestions of *Organic Education*, and does he speak after experience? Has he a school to meet the demands of the *Inter Ocean*, "A system that would insure the graduation of boys and girls who can read intelligently, write distinctly, add accurately, and spell correctly?" I venture to say he has not. Before this condition will obtain, something more than method will have to be considered. We shall be compelled to follow Dr. Holmes's plan namely, to begin with the grandparents; we shall have to find a school in which the children are free from the stunting influence of hereditary and acquired disease. They must come properly fed and clothed from hygienic homes to hygienic schools. To attain such a happy result the general adoption of the suggestions of *Organic Education* would, I believe, prove a potent factor.

Could Mr. Pratt have visited the Washington school he would have found that he was not "following theorists in their speculations amid the stars," but, on the contrary, was in a very mundane situation, surrounded by interested children, many of whom gave on their hands and faces unquestionable evidence that they were "of the earth, earthy." He would, I believe, have pronounced the work of the school at least equal to that of any school he ever visited, and far above the average of work in city grammar schools.

E. S. SHERRILL.
School Inspector, Detroit, Mich.

JANUARY 4, 1900.

PRESIDENT SMART PASSES AWAY.

James Henry Smart, A. M., LL. D., for the past seventeen years president of Purdue university, died Wednesday, February 15. His poor health for several years past is assigned to over-work. Dr. Smart had an interesting career, and one that was unusually active. He was a man of great capacity for work, and was so upright that he always enjoyed the confidence and esteem of those who knew him best. The following facts regarding his life, kindly furnished by the vice president, W. E. Stone, will be of special interest at this time.

He was born at Center Harbor, New Hampshire, in 1841. In 1848 the family removed to Concord, and here he attended the public schools with no unusual experiences except that he was admitted to the high school at the age of eleven, in which he made fair progress the larger part of the school year. During vacations, according to the New England custom, he found employment as clerk in a grocery store. In 1858 he sought employment in Boston and after a fruitless attempt he returned in sad disappointment to Concord. Here he met some of his early companions who had graduated from the high school and were bearing honors as teachers of district schools. The glory of their achievements, highly colored though they may have been, made the young man decide to return to his books, although they had never been wholly neglected since he left school six years before.

He re-entered the high school and remained one year, sometimes studying sixteen hours a day. In the fall of 1859 he was installed as a teacher of a district school about a mile from what is known as Tilton, N. H., where for nine weeks he wielded the rod over sixteen country boys and girls and boarded around in true Yankee style. He returned to the Concord high school with $36 in gold and a vast amount of experience. In May, 1860, as principal of the graded schools in Laconia, he began an occupation that was never interrupted, except from June, 1881, to June, 1883, during which time he was employed by D. Appleton & Company of New York.

He taught at Laconia one year; was principal of the high school at Claremont two years during which time he was a frequent contributor to local papers, did some reportorial work for the *Boston Journal* and was one of the assistant editors of the New Hampshire *Journal of Education*. It was also at this time that it was said of him by one of his patrons with whom he boarded that he taught all day and studied pretty much all night. He, himself, said that it was at this time that he laid the foundation of that disaster to his eyesight which for thirty years seemed to be almost an unsurmountable obstacle to his chosen profession.

In the Spring of 1863 he was elected principal of the Green Street school, Toledo, O., and in the Fall of the same year was promoted to the principalship of the intermediate department of the Toledo high school. In 1865, on the day he was twenty-four years old, he became principal of the Ft. Wayne (Ind.) schools and member of the State Board of Education. In the work of organizing and building up such a school system he displayed the greatest energy as well as the most consummate tact. He brought around him a corps of well-trained teachers and established one of the first training schools in the West; increased the capacity and equipment four-fold, made the schools popular with the people and gave them considerable reputation abroad. Very few teachers have enjoyed the love and confidence of his pupils, his teachers and all the community as he did while at the head of the Ft. Wayne schools. He may be said to have retained this good-will and confidence ever since.

It was during this period that the great work of organizing the new school system of Indiana under the Act of 1865 was accomplished. Of this period he himself has spoken as follows:

"The results of the revival of the educational spirit occasioned by this new law were somewhat remarkable. During the short space of ten years the school year was nearly doubled in length, many new schoolhouses were built, the amount annually paid teachers was nearly trebled, teachers' institutes were established on a firm basis, the manner of examining and licensing teachers was thoroughly reformed, the county

superintendency was established, the Normal school was built, Purdue university was opened and the work of the State university was greatly improved. So prominent had Indiana become that in 1876 at the Exposition in Philadelphia she made a showing that placed her in the first rank."

This is abundant testimony to show that he, himself, was one of the most active, progressive and intelligent workers on the State Board of Education. His Ft. Wayne friends made him their candidate for state superintendent of public instruction before the Democratic convention although he had never been known as a politician. He was nominated by an overwhelming vote and subsequently elected. He was twice re-elected, an honor which had never been accorded to any other man, and an expression of his popularity throughout the state. During this period he was ex officio president of the State Board of Education and a trustee of the State normal school.

Of his work while state superintendent the Indianapolis *Journal* under date of November 30, 1880, speaks as follows:

"The *Journal* embraces the occasion of the presence in the city of a large number of teachers from various parts of the state to pay a deserved tribute to the able, efficient and successful manner in which Superintendent Smart, who will soon retire from office, has discharged the duties of his position. In addition to large experience as a practical educator, he has shown himself to be possessed of executive ability of the highest order, and has devoted himself to the improvement of our school system with a zeal that knew no limits. To him more than any other one person is due the marked improvement of Indiana's common school system during the past few years. The teachers and educators of the state know this, but it is proper that the people should know it also. The best wish we can extend to the Republican superintendent-elect is that he may prove a worthy successor of Professor Smart."

After retiring from this office he engaged in business for a short time. In 1883 he was elected president of Purdue university and became ex officio again a member of the State Board of Education. It was said that he had the confidence of both political parties to such an extent that not a word of the school law was changed without his consent. During this period he has been quite a politician but it is to be noted that he never made a political speech, that he never solicited a personal vote, and that he exercised all the political influence he had in behalf of schools rather than in behalf of himself. His work and success as president of Purdue university are well known. In his death the school interests of Indiana suffer a great loss.

FLORENCE W. COTTON.

Mrs. Cotton, the wife of Deputy State Superintendent of Public Instruction, F. A. Cotton, died February 15 after a very brief attack of pneumonia. Mrs. Cotton was the daughter of Joel Wright of Henry county, Indiana, but for the last five years had been a resident of Indianapolis. She was a graduate of Spiceland academy, and had been a student at both Earlham college and the Indiana state normal. She was devoted to her family, a zealous Christian and though rather retiring in disposition the friendships she formed were close and enduring. Mr. Cotton and his two children, Irwin and Carol, will have the deep sympathy of their thousands of friends.

THE TWO INDIANA SPRING MEETINGS.

The two educational associations of Indiana, The Northern and the Southern, have completed their respective programs, and both may reasonably expect large and enthusiastic meetings. The hotels and the railroads are making the usual concessions.

The Northern Association will be held at Logansport, March 29, 30, 31, the general sessions convening in the Rink, Sixth street and Broadway. Both forenoon and afternoon of the first day will be devoted to visiting the Logansport schools and the various art exhibits. Commencing Thursday evening, March 29, the following is the general program.

THURSDAY, MARCH 29, 7:30 P. M.

Address of Welcome
Response Supt. I. V. Busby, Alexandria
Address of retiring president
. Supt. W. C. Belman, Hammond
President's Inaugural Address
. Supt. Justin N. Study, Ft. Wayne
Miscellaneous Business

FRIDAY, MARCH 30, 9 A. M.

Adaptability to Teach
Oscar T. Corson, President of the National Educational Association, Columbus, O.
The Rise of the Common Man
David Starr Jordan, President Leland Stanford, Jr., University, Stanford, Cal.
Originality in the Teacher O. T. Corson
The Blood of the Nation Dr. David Starr Jordan
Miscellaneous Business

FRIDAY, MARCH 30, 7:30 P. M.

Address—Agassiz as a Teacher . . Dr. David Starr Jordan
Miscellaneous Business

SATURDAY, 9 A. M.

Relation of the Superintendent to Teachers O. T. Corson
The Philosophy of Despair Dr. David Starr Jordan
Teaching Pupils to Help Themselves O. T. Corson
The Strength of Being Clean . . . Dr. David Starr Jordan
Miscellaneous Business J. N. STUDY, Pres.

MRS. E. M. RICHARDS, Sec'y.

The Southern Association meets at Evansville April 5, 6, 7. It is supposed that most of the first day will be spent in visiting the Evansville schools and the exhibits, though no official announcement to that effect has been made. The general session begins on the evening of the 5th, according to the following program:

APRIL 5, 7:30 P. M.

Address of Welcome: On Behalf of the City, ... by Hon. W. M. Akin, Jr., Mayor
Address of Welcome: On Behalf of the Schools, . . by Hon. Aaron M. Weil, Sec'y. Board of Education
Response by Supt. T. A. Mott, Richmond
Address of Retiring President . . J. P. Funk, New Albany
Inaugural Address—The Teacher's Opportunity Superintendent W. H. Wiley, Terre Haute
Appointment of Committees.
Announcements.
Miscellaneous.

FRIDAY, APRIL 6TH, 9 A. M.

Address—The Formation of Habits, or An Experiment in Pedagogy Dr. John Dewey
Of the University of Chicago
Address—Essential Principles of Teaching Miss Sarah Louise Arnold, Boston

Intermission.

PhysicalCulture Exercises, Primary Grades of Evansville Public Schools.
Address—The Formation of Habits, or An Experiment in Pedagogy (Concluded) . . . Dr. John Dewey
Address—The School as a Preparation for Citizenship, ... Miss Sarah L. Arnold
Address—History in the Grades Ellwood W. Kemp
Professor of History, I. S. N., Terre Haute.

7:30 P. M.

Physical Culture Exercises—Intermediate Grades of Evansville Public Schools.
Annual Address—Pending Educational Problems Dr. John Dewey

APRIL 7TH, 9 A. M.

Address—A Working Scheme of Correlation Dr. John Dewey
Address—The Child's Side of Things Miss Sarah L. Arnold

Intermission.

Physical Culture Exercises—Grammar Grades of Evansville Public Schools.
Address—The Place of Imagination in Education Dr. John Dewey
Address—In School and Out Miss Sarah L. Arnold
Paper—Honesty in School Work Miss Emma McTaggart, of the Vincennes High School
Reports of Committees.

W. H. WILEY, Pres.

MISS CLARA MITCHELL, Sec'y.

It will be noticed that the committees of both associations have provided rich programs, including addresses from some of the most eminent men in the country. To hear a series of addresses either from Dr. Dewey or Dr. Jordan is an opportunity that teachers can not well afford to miss.

At Evansville there will be section meetings for the high school, child study, primary, music, and writing and drawing departments. The Logansport program provides for grade, high school, and art sections.

Fine music may be expected throughout the association at both places.

INDIANA STATE BOARD QUESTIONS FOR FEBRUARY, WITH DISCUSSIONS.

HISTORY.

1. The Turks captured Constantinople in 1453. What connection, if any, had this event with the discovery of America?
2. What knowledge of general history is necessary to a proper understanding of the history of our own country?
3. What was the extent of the British possessions in North America as settled by the treaty of 1763?
4. (a) What plan of campaign was adopted by the British for 1777?
(b) What were the results?
5. What was the closing military event of the war of 1812? What effect did it have?
6. What dispute gave rise to the Compromise of 1850, and what were the terms of the Compromise?
7. When was the Emancipation Proclamation issued, and what were its immediate effects?

1. They turned back the tide of travel eastward and set people to seeking other routes to India.

2. (a) A knowledge of the renaissance period when were developed the forces that gave an impulse, among other things, to adventure and discovery.

(b) A knowledge of European relations during our colonial and revolutionary times.

3. All territory east of the Mississippi from Canada and Cape Breton to the gulf of Mexico, except New Orleans.

4. (a) Burgoyne was to come from Canada by Lake Champlain and the Hudson river, while Howe was to move up the Hudson and meet him. This move would have cut the northern section in two.

(b) Howe was delayed; Burgoyne was defeated in the decisive battle of Saratoga.

5. The battle of New Orleans, fought after the declaration of peace, and hence without influence in effecting a settlement.

6. It had its origin in the Missouri Compromise, and was concerned chiefly with the slavery

dispute. The provisions of this Omnibus Bill are well known—California to be free, New Mexico and Utah either free or slave, Texas paid to give up New Mexico, etc.

7. The final proclamation was issued January 1, 1863; the preliminary proclamation a hundred days earlier. The freedom of slaves in the seceding states.

READING.

(Based on general field of Reading.)

1. Are pictures helpful in teaching younger pupils to read? If so, how?
2. How much importance is to be attached to the learning of the definition of the words in the reading lesson?
3. What is the difference between the function of the author and that of the reader?
4. Are geographical and natural science readers desirable? Why?
5. Ask five questions best adapted to bring out the meaning of the following:

"Here rest the great and good. Here they repose
After their generous toil. A sacred band,
They take their sleep together, while the year
Comes with its early flowers to deck their graves,
And gathers them again, as Winter frowns.
Their's no vulgar sepulcher—green sods
Are all their monument, and yet it tells
A nobler history than pillared piles or the eternal pyramids.

6. In oral language the thought suggests the words: what of printed language in this respect?

1. Yes, if properly used. They give definiteness to the ideas of the pupils, and may be useful in keeping the work from being formal and lacking in concreteness. The mistake may be made of allowing the picture to occupy the mind to the exclusion of the real medium to be learned—the language.

2. Very little importance is to be attached to the learning of definitions as such, but it is of the greatest importance that the pupil have a clear understanding of the meaning of every word in the lesson in the special connection in which it is used.

3. The function of the author is to body forth meaning in language, while the function of reading is to pierce through the medium of expression used, the language, and grasp the author's meaning.

4. If accurate and written in an attractive way they are valuable for supplementary reading work. They furnish a wide variety of interesting matter which broadens the pupil's knowledge while it serves as a practice ground for reading proper.

5. (1) What can you infer as to the nature of the persons spoken of?

(2) What kind of monument have they?

(3) What personification in the third sentence?

(4) What is meant by "vulgar sepulcher?"

(5) What contrast is suggested in the last three lines?

6. In printed language as in oral the thought suggests it, but there is opportunity for more reflection and closer discrimination in the choice of words.

(Based on "How to teach Reading.")

1. What effect upon expression have stern, harsh feelings?
2. What is meant by the saying. "The man is the expression?"
3. What feelings and spirit lead to musical expression?
4. Underscore the emphatic words in the following:

"In words, as fashions, the same rule will hold—
Alike fantastic, if too new or old;
Be not the the first by whom the new are tried,
Nor yet the last to lay the old aside."

5. What is the value of a pause in the process of reading?
6. What is meant by "grouping?"
7. In general, what thoughts and feelings are expressed in low tones?

1. The expression partakes of the quality of the feelings. If these are stern and harsh, the muscular condition of the vocal organs corresponds, and the expression is gutteral in quality. (Pp. 82, 94.)

2. Expression is naturally the result of the thought and feeling in the reader. The value of his reading depends upon the breadth of his comprehension. Hence his own nature ("the man") determines ("is") the expression.

3. Strong feelings and extremes of spirit or mood lead to rythmical or musical expression.

4. "In *words*, as *fashions*, the same *rule* will will hold—
Alike *fantastic*, if too *new* or *old*:
Be not the *first* by whom the *new* are tried,
Nor yet the *last* to lay the *old* aside."

5. (1) "We think in ideas, not in individual words, and these ideas are separated in our minds by pauses of varying length."

(2) "The pause is made as the result, to a greater or less degree, of collateral thinking." (P. 33.)

6. Grouping refers to the tendency in reading to break up the sentence into groups of varying length. The groups are expressions of more or less definite ideas. (P. 28.)

7. Solemn, sorrowful, introspective moods take on a low tone.

PHYSIOLOGY AND SCIENTIFIC TEMPERANCE.

1. What constitutes the internal ear?
 (b) Describe the cochlea.
2. Can a schoolroom be properly heated by a stove? Why?
3. Why should we not attempt severe work immediately after a meal?
4. What veins enter the heart and at what places?
5. Describe a muscle. How is it attached?
6. Define a cell, and describe a typical one.
7. How does the percentage of alcohol in whiskeys and wines compare?
8. Name three effects of alcohol upon the mind.

1. It consists of the vestibule, semicircular canals and the cochlea. The cochlea is somewhat like a snail's shell in form, the spiral canal making two and one-half times around the central

pillar. A partition, formed by a bony shelf from the central pillar and the basilar membrane, divides the canal into two nearly equal parts. Another partition, the membrane of Reissner, cuts off a narrow triangular canal from one of these divisions, wh.ch is called the scala media. It is a closed cavity. In it, resting on the basilar membrane, is the organ of Certi, and the auditory hairs, the terminations of the auditory nerve. The larger divisions are the scala vestibuli, communicating with the vestibule and the scala tympani, separated from the middle ear by the membrane of the oval window. These scala are in communication at the apex of the cochlea. The larger scala contain perilymph; the scala media being filled with endolymph.

2. No, not as ordinarily used. Because the stove could not heat the room uniformly. It would be too warm or hot near the stove and in the upper parts of the room, and too cold on the floor and near the outer walls of the room.

3. Because the blood and nervous energy necessary for severe work is needed in digesting the food.

4. The superior and inferior vena cava open into the right auricle, and the pulmonary vein enters the left auricle of the heart.

5. The active part of a muscle is a reddish semi-fluid substance much like protoplasm. The fiber of a striated muscle is about one inch long, and about 1-500 of an inch wide. It consists of a little mass of muscle substance wrapped in a layer of connective tissue called sarcolema. These fibers are arranged into bundles, each covered by connective tissue. The bundles of fibers form a muscle which is also covered with connective tissue called perimysium. The connective tissue so abundant in muscles extends beyond the muscle substance forming tendons of which the muscles are attached to the bones. Just how the tendon takes hold of the bone is not well understood.

6. The cell is unit structure of a living body whether plant or animal. It lives, appropriates food, grows, multiplies, and with its fellows does the work of the body. The cell is a little mass of protoplasm usually granular, which is in general surrounded by a wall of connective tissue. In active cells there is a nucleus, which is largely made up of thread-like protoplasm, called chromatin. Among these are granules called nuclei. Besides these there is a little spherical body near the nucleus called centrosome. The purpose or value of these different parts is not well understood. The cells vary widely in size, form and function, but they are always small, usually microscopic.

7. In wines there is from four per cent. to twenty-five per cent. of alcohol, in whiskey there is, or should be, from forty-five per cent. to fifty-five per cent. of alcohol.

8. For a short time alcohol may stimulate the mind, but it soon becomes a sedative, reducing the activity of the mind. If the dose is large it gradually produces complete anesthesia. The continued intemperate use of alcohol at length weakens and disorders the mind.

LITERATURE.

1. Who is your favorite author? Why?
2. Main facts in his life?
3. His place in literature?
4. Which do you prefer—poetry or prose? Why?
5. Give a brief outline of the story of some novel you have read.
6. Describe one of the characters in the same novel.
7. Name the kinds of persons who appear in some one play of Shakespeare's.
8. Give the main idea in some poem of Longfellow's.
9. Give the principal argument of one of Webster's orations.
10. Write a paper of not fewer than 150 words on The Best Way to Study.

As in the January examination the questions in this subject are designed to give the applicant an opportunity to express some of his own impressions. Hence, nothing would be gained by giving a set of answers.

SCIENCE OF EDUCATION.

1. Explain what is meant by the culture-epoch theory.
2. Give your opinion as to the validity of the culture-epoch theory.
3. In "Organic Education" the author states some important differences between the theory therein advanced and the culture-epoch theory as applied by Zillar and his followers in the German schools. What are these?
4. Explain what is meant by the "organization.' method of using the material supplied?
5. What do you understand by the "concentration" method of using the material? Illustrate.
6. Describe in general terms the education of ancient Greece.
7. What elements, if any, in the education of ancient Greece should be incorporated in all modern systems of education?
8. What were the leading characteristics of the education of Sparta?
9. What features, if any, of Spartan education, are worthy to be included in modern education?
10. Name two or more of the great teachers among the Greeks and state something of their methods of instruction.

1. It is believed that the individual is the epitome of the race, that the periods that mark the stages in the development of the race have their counterpart in the development of the individual, and that the product of the race in these respective periods may be used to advantage in the education of the individual.

2. The theory is probably valid, and it is so considered by most educators. The difference of opinion lies in the application. Possibly a too literal application cannot be made.

3. First, the culture epochs used in foreign schools confine themselves largely to German and biblical history, whereas any American system must accommodate itself to the breadth of

our national inheritances, and to the non-sectarian principles of our schools. Second, the author claims essential differences between the organization and concentration methods of using the material provided.

4. The organization method starting from a certain period of race development, successively differentiates the period into all its various interrelated activities, industrial, artistic, scientific, mathematical, political, social, religious, and then by comparison with other periods, unifies it again into what seems to be its fundamental idea. The various branches are not correlated or concentrated by artificial means.—*Organic Education.*

5. The German schools carry on simultaneously several distinct lines of work; for instance, German and biblical history, nature study, drawing, language, arithmetic or numbers, establishing between them, in the teaching, some connection, either artificial or natural, for the sake of unity.—*Organic Education.*

6. The education of ancient Greece was largely individualistic. This principle extended to communities, cities and states, each having its characteristics. In Athens the culture phase of education predominated and art flourished. In Sparta the physical, military phase was predominant; the state bred soldiers.

7. Both the art side, or culture phase of Athens and the sound body idea of Sparta should be incorporated in every system of education, but not in the ways they were there. The present conditions of state will dictate the differences.

8 and 9. See 6 and 7.

Socrates, Plato and Aristotle were the great teachers among the Greeks. The method used for the most part was the Dialectic and they strove for a realization of the truth universal.

GEOGRAPHY.

1. Discuss fully "Trade on the Ohio River."
2. What is meant by the rotation of crops.
3. How did the United States come into ownership and control of Hawaii.
4. Write fully upon the products of the Philippine islands.
5. Why are there so few cities and towns on western plains.
6. State, in round numbers, the annual output of gold in the United States.
7. What importance do you attach to the keeping of a daily weather record in the schools.
8. In making a cabinet of minerals or soils the *collecting* is more important than the *collection*. Discuss.
9. Discuss Louisville as a trade center.
10. Give reasons for the study of Seven Little Sisters in the public schools.
11. How may pupils see the rotation of the earth?

1. Trade on the Ohio river, greatly fallen off in late years, is confined mainly to the local passenger and freight traffic between the cities and towns along its banks not connected by rail with other cities. Packet boats run daily along most of the river. An important trade in coal is carried on between Pittsburgh, Pennsylvania, and places along the lower Ohio and Mississippi rivers. In 1889 seventy-five propellers and hundreds of barges were thus employed. Large numbers of logs are rafted from the forests of West Virginia to mills along the Ohio.

2. The rotation of crops is a certain definite succession of crops raised upon a piece of land through a series of years, as grass, corn, oats wheat, etc.

3. The people of Hawaii carried out a successful revolution by which the monarchy was overthrown and a provisional republic was established. The new government asked the United States to assume control and protection of the islands, which, after several years' delay, was done.

4. They produce chiefly hemp, tobacco, sugar, dried cocoanut and rice, and in smaller quantities coffee, cocoa, vanilla, pepper, indigo and tropical fruits. Tobacco is grown in the northern part, rice in the central, and hemp and sugar in the southern. Coal, iron and other minerals exist but have not been developed.

5. Because of the high altitude and dry climate the western plains are not suitable for agriculture, and support only a sparse population engaged in grazing.

6. In 1897, $57,363,000.

7. The purpose of a daily weather record is to form in the pupils the habit of observation, and to make them familiar with the obvious facts in the character and changes of weather. By this means a foundation is laid in experience upon which an explanation of the facts may be based, and the pupil led to know something of the science of meteorology.

8. The soils or minerals collected by a student may be worthless to anybody but himself, but in making the collection he has cultivated a habit of observation and gained a knowledge of the minerals which he could acquire in no other way.

9. It is situated at the "Falls of the Ohio," where a canal has been constructed around the rapids. It has connection by water with the Ohio and Mississippi system and with the navigable waters of Kentucky, and by rail with the northern and southern railway systems. It is a good example of a city at the crossing of a great water route and a great land route for commerce. It is also at the head of navigation in the Ohio for large steamers.

10. The Seven Little Sisters represent as many different peoples living under different conditions of climate and physical surroundings by

which their manner of life is greatly influenced. The presentation of these personages, their life and surroundings in story form to children is a very interesting, and hence a good pedagogical method of developing the geographical ideas intended to be set forth in the book.

11. By watching the apparent motion of the Great Dipper around the pole-star and the nightly rising, westward march and setting of the stars nearer the zenith. Watching the gradual rise of the full moon or setting of the sun will help anyone to realize the rotation of the earth.

ARITHMETIC.

1. What is meant by picturing a problem? Is this a valid method? If so, when?

2. Add

611,048
626,915
537,454
442,014
780,894
122,993
726,915
484,472
705,606
560,247
827,922
439,706
864,899
671,361
225,168

3. At a forced sale a bankrupt sold his farm for $6,642.00, which was 18 per cent. less than its real value. What was the value of the farm?

4. What principal will at 7 per cent. simple interest gain $53.08 in 1 yr., 6 mos., 6 days?

5. In reckoning what advantage has Arabic over the Roman notation?

6. A young man's salary increased one-third every year; his expenses each year were one-third of his salary, and at the end of four years he had saved $1,050.00. Find his last year's salary.

7. $x^2 + y^2 = 41$
$x + y = 9$
Find the values of x and y.

1. A representing of objects to help the chiid make number combinations. It is valid in the early study, but should be csnsidered a means, not an end.

2. 8127104

3. $6642 ÷ .82 = $8100.

4. $1 at 7% for the given time yields $.106⅔
$53.08 ÷ .106⅔ gives $499.95 +

5. The decimal system is better adapted to all arithmetical process. The Arabic is much shorter.

6. Suppose salary for the successive years was $1, $1⅓, $1⅘ + $1⅓. Then expenses would be $⅓, $⅔, $1⅓, $2⅔. Total salary $5⅓. Total expenses $3⅕. Total saved $2⅘. $10.50 ÷ 2⅘ gives $243, first year's salary $243 × ⅔ = $576.

7. x = 4, y = 5

GRAMMAR.

He usually divided his time into three equal portions: One was employed in sleep, and the refection (refreshment) of his body by diet and exercise; another in the dispatch of business; a third in study and devotion; and, that he might more exactly measure the hours, he made use of burning tapers of equal length, which he fixed in lanterns.—*David Hume.*

1. Classify the clauses in the above selection.
2. (*a*) Give three modifiers of "divided."
(*b*) Two of "might measure."
3. Select four transitive verbs and give the mode and voice of each.
4. Name (*a*) four adjective phrases; (*b*) four adverbial phrases.
5. Give the syntax (case and reason) of (*a*) sleep; (*b*) another; (*c*) length; (*d*) which.
6. Name the connectives and tell what they join.
7. State what each of the following modifies: (*a*) exercise; (*b*) devotion; (*c*) more exactly.
8. Why do children oftentimes regard composition writing an irksome task?
How may it be made a pleasing one?
9. What is the truly philosophical way to learn to speak and to write correctly?
10. Write with the same care that you would wish pupils to exercise not less than one hundred words on *one* of the following topics:
(*a*) The physical geography of this county.
(*b*) A visit to the capitol at Indianapolis.
(*c*) The story of the "Great Stone Face."

1. The clauses are all coordinate, independent except two: (1) "That he might more exactly measure the hours," a subordinate, substantive clause. (2) "Which he fixed in lanterns," a subordinate, adjective clause.

2. (a) "His time," "into three equal portions," and "usually."

(b) "More exactly," and "the hours."

3. "Divided," indicative, past tense; "might measure," subjunctive (old potential), past tense; "made," indicative, past tense; "fixed," indicative, past tense.

4. (a) "Of his body," "of business," "of burning tapers," "of equal length."

(b) "Into three equal portions," "in sleep," "in the dispatch of business," "in lanterns."

5. (a) Objective case, principal part of prepositional phrase.

(b) Nominative case, subject of the clause.

(c) Objective case, principal word of prepositional phrase.

(d) Objective case, direct objective modifier of the verb, "fixed."

6. The word "and," (understood except between the last two clauses) and the word, "for," (understood) express relations between thoughts of equal rank. In two places the word, "and," expresses relation between ideas of equal rank. The word, "which," expresses the relation between thoughts of unequal rank.

7. (a) It is the principal word of a prepositional phrase. (b) The same is true of the word, "devotion." One might tell what the phrase modifies but the word, "devotion," does not modify anything. (c) "Might measure."

8. It must be admitted that there is a good deal of drudgery about composition writing, but too often pupils are not helped enough in organizing the thought which they are to express in a composition. In the first place, they can think of nothing about which to write—

they have nothing to say—no message; and in the second place, when they do find something to say they do not know how to go about it—how to organize their thought—what should come first, what next, and what last. Help them along these lines. Let them study good literature and write about that a great deal.

9. First become thoroughly interested in the English language—anxious to use it well which will lead you to observe your own speech, try to find out what is correct and what is wrong in English, and adopt the good. Then when you are old enough, master the science of the English sentence in a logical way, by beginning with the thought it expresses, and thinking it out for yourself. Apply the principles thus evolved daily to your own speech.

AMONG THE NEW BOOKS.

Bird-Life, by Frank M. Chapman, is one of the few really inspiring and reliable books on birds among a host that have been published. The average writer of nature books of to-day knows too little about nature and even less about the essentials of education and methods in education. Not so with Mr. Chapman. He is not only a trained naturalist, but his long and active interest in nature work in the schools has given him a clear conception of what the schools should do and how it may be done. Mr. Chapman believes that ornithology possesses many advantages as a nature study. More than any other of the attractive animals about us, birds are always with us. We can seldom want for material for study. We can find them not only in the woods and fields but in our city parks as well. In this book the opening chapters briefly define the bird, its place in nature and its relation to man, and outline the leading facts in its life-history. The remaining chapters present the portraits, names, and addresses of upwards of one hundred familiar birds of eastern North America, with such information concerning their comings and goings as will enable one to find them at home. The seventy-six full-page plates and numerous text drawings by Ernest Seaton Thompson add greatly to the attractiveness and value of the book. The book is beautifully gotten up and will doubtless have a large sale. [D. Appleton & Co., New York, XII+269 pages and 76 full-page plates, $1.50.]

A book by Professor Henry W. Thurston on *Economics and Industrial History* for secondary schools is an announcement that will be read with much interest by teachers of these schools. The writer evidently believes that a knowledge of the fundamentals of economics should not be limited to the small per cent. of students who go to college, and that there should be a popular presentation of these principles, looking toward better citizenship. Hence industrial relations, not in theory alone, but as they actually exist are the main thing to be placed before the student. He is first asked to group and classify the occupations of which he knows, A brief study of these leads up to utility, production, ownership and property. Part II traces the industrial development historically, in England and America, from the time when each home very largely supplied its own needs, up through the Gild and the Domestic periods to the present elaborate Factory system. Part III is a clear presentation of the subject of economics in general for classes who wish to continue the study at greater length. In this part much is said on the subjects of profit-sharing and cooperation of which we hear so much these days. One can not help feeling upon reading the book that if there is at present no place in the high school for such a study as this book provides, there at least ought to be. A Teacher's Manual is provided—twenty-five pages, separately bound. [Scott, Foresman & Co., 300 pages, $1.00.]

Dr. Frederick E. Bolton of the state normal school at Milwaukee has written for the "International Education" series a treatise on the *Secondary School System of Germany*. Remembering that so many of the foundation principles in education are of German origin, and that we still look to that country as a leader in things philosophical, no one will question the large benefit that is likely to result from a careful study of the German systems. The fact, too, that civic relations and duties there are different from what they are in America will lessen the danger of slavish imitation and oblige us to adapt whatever we may find that is good before we attempt to adopt it. Dr. Bolton discusses his subject at first-hand, as the result of an extended personal study, not only of secondary schools but of the whole German system, from kindergarten to university. Training of teachers, examinations, courses of study, tenure of office, salaries, education of women, the place of secondary schools in the system, special training, are among the subjects considered. One thought in the preparation of teachers seems especially worth quoting: "Each student ought to take one line of intensive work so that graduates would be not merely teachers, but *teachers of something*. While the man, the woman is above the subject,

yet there need be no sacrifice of character in preparing for a definite thing. The character will then be enabled to assert itself all the more strongly." [D. Appleton & Co., 398 pages, $1.50.]

The present is peculiarly a time when the world is ready to hear a man who really has something to say. And the man who has a message is generally the man who has done something. The one who theorizes and speculates may have something of an audience provided he entertains, but such an one is more likely to amuse than to convict. The school world has felt for some time that Dr. Dewey of the University of Chicago had something to say regarding an interesting experiment which he has been conducting with children. Hence his book, *The School and Society*, has been warmly welcomed. The body of the book consists of three lectures in which are set forth the writer's belief that social conditions are radically changed, and his conviction that the great need in education is to have the schools change with them. But there is much more than theory. Dr. Dewey draws freely upon his experience with children to exemplify not only what may, but what has been done. The present volume is highly worth careful reading, and is really, let us hope, the promise of another. [The University of Chicago Press, 75 cents.]

"To my Indian Friends from whom I have gathered Story and Song." Such is the dedication in a delightful new volume by Alice C. Fletcher, entitled *Indian Story and Song from North America*. The book would be an interesting one if it did nothing more than show us a new phase of the Indian. The popular notion gained mostly from the old-time Indian story is that the red man is wild, barbarous, treacherous, indolent, and so forth. Parkman has done much to give us a true view, and Longfellow has shown us the Indian idealized; but neither of these writers has wholly corrected the false estimate mentioned above. Miss Fletcher's book will help to do this. It is not merely a collection of legends told to entertain, but rather a scientific study of some legends, and the music by which the natives chant and recite them. As the dedication suggests, they are told at first-hand, thus having a flavor and freshness about them that will delight the reader. The well-known musician, J. C. Fillmore has harmonized the music. [Small, Maynard & Co., Boston, $1.50.]

For their price, it would be hard to duplicate the "Pocket English Classics Series." Well printed, substantially bound in levanteen, they form handy and neat booklets. The two latest to reach our table are *Julius Cæsar*, and *Vision of Sir Launfal*. The former is edited by George W. Hufford and Mrs. Lois G. Hufford. The study as outlined in the introduction embraces a sketch of Shakespeare, a sketch of Cæsar, and some interesting material bearing on the play. In the added notes there are many quoted passages from Plutarch and other writers. *Vision of Sir Launfal*, is edited by Herbert Bates whose introduction and notes indicate a sympathetic comprehension of the spirit of this and the dozen or more poems besides, which the volume includes. An interesting feature is a list of ten subjects for composition. There are eighty pages of text, and copious notes. [The Macmillan Co., 25 cents.]

In the "Beacon Biographies" the latest volume to reach our book table has for its subject *Thomas Paine*. Scarcely any other man of his time has been so much misunderstood as Paine. His enemies denounced him with a bitterness and a bias that went beyond reason, while his ardent admirers and sympathizers went to the opposite extreme. For such a character there is need of a dispassionate biography, and this the writer, Ellery Sedgwick, aims to supply. His purpose is to record the events of the great man's life as they were, suppressing neither fault nor virtue, and leaving the reader to form his own judgment. The story of the intense life—exciseman, teacher, journalist, soldier, pamphleteer, controversialist, inventor—sounds like a romance. To many a reader who loves liberty as Paine did, and who would gladly know if the discordant elements in his life may be harmonized this impartial sketch will be especially welcome. There is an excellent photogravure as a frontispiece, reproducing a portrait that hangs in Independence Hall. [Small, Maynard & Co., Boston, 150 pages, 75 cents.]

Messrs. Laird & Lee of Chicago, have just added to their admirable collection of reference books a valuable pocket compendium entitled *The 20th Century Handy Cyclopedia Britannica*, compiled by Alfred B. Chambers, Ph. D. It is a 5½x3¾ inch volume, of 880 compact columns, containing a wealth of alphabetically arranged information. The subject includes History and Dates down to the present year; Geography and Biography carefully revised; all the leading Facts, Theories and Discoveries in Medicine, Chemistry,

Physics, Botany, Zoology, Astronomy, Meteorology, etc., etc. Nothing of interest to the present generation has been neglected, and even Law and Business have received their share of the author's attention. [Laird & Lee, full leather, full gilt, thumb-indexed, $1.00; cloth, 50 cents.]

The volume of *Addresses and Proceedings* of the last session of the N. E. A. is ready for distribution, and the wise teacher who does not already possess a copy will hasten to send two dollars to the secretary, Irwin Shepard, Winona, Minn., asking to have one sent. The reason for this bit of free advice is that there are only about 500 copies for sale, and that, in the opinion of the writer of this paragraph, the volume is of very great value. Its real value is doubtless hidden under an almost overwhelming sense of quantity. But within the plain black covers, uninviting as any catalogue, there is a whole library on educational subjects ranging from kindergarten to college—from manual training to music. It includes also three valuable reports from the Committee on College Entrance Requirements, the Committee on Normal Schools, and the Committee on Relations of Public Libraries to Public Schools.

The conclusion reached several months ago by a committee on school texts in United States history that the ideal book had not yet appeared precludes the possible criticism that there are already such books in abundance. So the announcement of a new one must be at once followed by the wish to know how it improves upon its predecessors. In the "New Era" series Alma Holman Burton has prepared *A History of the United States* that has many good things to commend it. In both style and matter it aims to be popular rather more than scientific. An easy narrative, a careful choice of the things most worthy of record, a large clear page, an abundance of maps and illustrations, and a series of marginal notes with dates and sub-titles of paragraphs. A series of charts in black and white, showing electoral votes in each presidential election is an interesting feature. The record runs well into the McKinley administration. [Eaton & Co., Chicago, 423 pages, 80 cents.]

There is hardly anything else in the world so delightful as real story-telling, especially for children; and it seems all the more delightful when one of the busiest and withal one of the most scholarly of men is found in the role of the story-teller. *The Book of Knight and Barbara* is a series of stories told by Dr. David Starr Jordan to his own children, and caught on the fly, so to speak, by the stenographer, for Dr. Jordan declares that they were not at all intended for publication when they were first told. This very fact gives them a kind of spontaneous flavor that we all relish. Some of the stories are as original as anything one could imagine, others are the old classic tales with some original grotesque and fanciful touches that make them delightfully new. Many of the illustrations are by children themselves, expressing their conceptions of the scenes and characters described, and thus making for teachers an interesting study in the working of the child mind. [D. Appleton & Co., 265 pages, $1.50.]

The publishers of the admirable "Four Great Americans" series have just brought out volume V, which takes up Irving, Poe, Lowell and Taylor as *Four Famous American Writers*. After the volume which treated Bryant, Longfellow, Whittier and Holmes it would have been difficult to select four American writers who better represent the best in our literature than just these four; and the author, Sherwin Cody, has charmingly shown many of the interesting incidents in the lives of these four writers, as well as the features of their work that most please us. The fact that so much is said of their boyhood will insure interest among the children of the seventh and eighth grades, for whom the book is intended. The portraits are of good quality. [Werner School Book Co., 50 cents.]

An excellent edition of *Silas Marner* edited for school use has just appeared in the "Twentieth Century Text-Book" series. It is brought within a limit of 250 pages of good print. Richard Jones of Vanderbilt university and J. Rose Colby of the Illinois state normal university furnish an introduction and notes. The introduction includes brief essays on "The Study of Fiction," "George Eliot's Aim and Method," "Silas Marner," "Life of George Eliot," and a bibliography of "Biographical and Critical Studies of George Eliot." This introduction affords a very satisfactory preparation for reading and studying the novel. The comments and questions covering some twenty pages are both concise and suggestive. This editing and abridging of masterpieces, if well done is much to be commended. [D. Appleton & Co., 45 cents.]

Professor Elisha Gray, the author of a little book entitled *Nature's Miracles* takes the view that all the marvelous processes of nature are

miraculous to those who do not comprehend them, but that after all there is a law to which every wonder is subservient. Professor Gray is a man who is at home with nature, and in this book he invites his readers to sit with him while he talks familiarly about earth, air and water. He seems not only to know nature, and boys and girls as well, but also to understand the delights which nature has in store for those who really get acquainted with her. The talks are simple though not childish, and they are charmingly personal. There to be three volumes in the series. [Fords, Howard & Hulbert, 243 pages, 4½x6¼, 60 cents.]

There has appeared a revised and enlarged edition of Albert F. Blaisdell's *First Steps With American and British Authors*. The book is based on the theory that the formal study of any author should be prefaced by a thorough drill on some representative selection from his writings. And so, for example, Longfellow's *Wreck of the Hesperus* is taken as a model and studied under the heads of careful reading, the story, analytical study of the text, and the author. Other models are given, and outlines for the study of a prose selection and for a course in English literature. The latter half of the book is devoted to sketches of leading American and English writers, with one or more typical selections from the works of each. Dr. Blaisdell's book will be found especially helpful to classes beginning to study English literature. [American Book Co., 442 pages, 90 cents.]

A book that should be in every school library, or better still, that every boy should own, is *Helps for Ambitious Boys*, by William Drysdale. There is nothing else that so appeals to a boy's rational ambition as a concrete example of what other boys have done. Where these boys have become good and honorable men it is legitimate to use them as examples, and the ambitions so born are likely to be both reasonable and wholesome. We have been too prone to hold up as heroes men of military renown; this book considers the advantages, and the disadvantages as well, of many occupations. Men who have succeeded in these various walks of life give their opinions and advice upon many subjects that will interest the boy who is wondering what he will be. There are many maxims sandwiched into the text, quoted from all sources from Poor Richard to Carlyle. There are also many full-page, half-tone portraits of successful men. [T. Y. Crowell & Co., 439 pages, $1.50.]

Among the "Appleton's Home Reading Books" there has just appeared a selection of *Stories from Arabian Nights*, by Adam Singleton. The author considers that our widening foreign relations will naturally increase our interest in everything oriental, and that since fancy and fable have so influenced eastern life we should become familiar with these things as expressed in oriental literature. The use of thirty-five pages to explain how the tales came to be told, and to describe the life and customs of the Arabs, makes an excellent introduction. The versions of Sir Richard Burton are closely followed. This alone is sufficient commendation. [D. Appleton & Co., XVI + 248 pages, 65 cents.]

Games for Schools and Gymnasia, by W. C. Schaefer, is based upon the belief that "the surest basis for a strong and healthy mind is a strong and healthy body, trained to the highest degree of efficiency. "Whatever then serves to relax the tension of work or of study and at the same time induces neither ill temper nor physical ills may be thought worthy of careful attention. More than eighty games ranging from "Puss in Corner," to "Battle Ball" are fully described. Teachers will find it a valuable help in directing their pupils' play. [Freidenker Publishing Co., Milwaukee, Wis., 50 cents.]

The World Almanac for 1900, like its long line of progenitors, is a genuine multum in parvo; it is an encyclopedia in a nutshell; with this at hand you can hardly be cornered; it is a friend in need, and would tax the ingenuity of a wise man to tell what it does not contain. [The Press publishing Co., Pulitzer Building, New York, 25 cents.

The second number of the "Riverside Art Series" is devoted to *Rembrandt*. The sixteen photographic reproductions are in themselves works of art in miniature. They are printed in brown, and bring out in a remarkable way the peculiar effects of light and shade which constitute the charm of Rembrandt's work. Five of the pictures reproduced were original etchings. The descriptions that accompany each picture are simple and direct. One feels after reading the ninety-three pages that he really knows Rembrandt quite well. [Houghton, Mifflin & Co., 30 cents.]

Another masterpiece recently edited for the "Twentieth Century" series, by George M. Marshall of the university of Utah, is Dryden's

Palamon and Arcite. The fact that this is the one of Dryden's longer poems best worth knowing justifies its selection. The editor recognizes the common error of trying to do the student's critical work for him, and hence wisely suggests lines of study, furnishing only a limited number of notes. The introduction gives a good view of the literary period in which dryden lived and an estimate of his place in that period. [D. Appleton & Co., 40 cents.]

Many superintendents and teachers will welcome the appearance of *The Institute Hymnal* edited by Charles Taylor Ives and Raymond Huntington Woodman. It is a well-bound collection of some two hundred songs and hymns in which the poetical and the spiritual elements predominate. They are peculiarly adapted to chapel services and opening exercises, and lovers of the best music will be glad to find that many of the standard favorites are included. [Fords Howard & Hulbert, New York. 50 cents.]

Professor Ulysses O. Cox of the state normal school at Mankato, Minn., has published a *Syllabus of Elementary Physiology*, with references and laboratory exercises. The chief excellence appears to be in the grouping of the experiments and outlines under definite subjects. The plan was worked out in class-room, but does not follow any one text-book. A large list of books is named at the close and these are referred to by figures throughout the exercises. No price is quoted.

To place directly in the hands of the pupil a quantity of bright entertaining material relating in a more or less direct way to American history is the purpose of Eleanor A. Persons in preparing *Our Country in Poem and Prose.* It is a delightful collection of short pieces from standard authors, and besides helping to foster the children's interest in history it is well calculated to encourage patriotism. [American Book Co., 204 pages, 50 cents.]

Many students and teachers will be interested in a small book of arithmetical solutions prepared by L. M. Sniff, president of the Tri-State normal college at Angola, Ind. The author's evident purpose is less to offer a set of solutions that might serve as models to be mechanically followed, than to show pupils how to discover and develop underlying principles. The solutions are simple and logical and will surely prove helpful to all in need of such direction. [J. R. Holcomb & Co., Cleveland.]

Besides being one of his shorter stories, Dickens's *Tale of Two Cities* is one of his best. It is acknowledged, too, as a fairly authentic historical picture of the terrible times it describes. Ella Boyce Kirk has prepared a school edition of the story for the "Eclectic" series, making it somewhat shorter than the original by omitting a few passages not essential to the unity of the story. The abridgment brings it within the limit of 300 pages. [American Book Co., 50 cents.]

Number 137 in the "Riverside" series contains Bryant's translation of Books I, VI, XXII, XXIV of the *Iliad.* There is a brief introduction and a few notes. The selection of these four books is a happy one affording, as it does, a fair sample of Homer's great epic. [Houghton Mifflin & Co., 120 pages, 15 cents.]

The acquisition of Puerto Rico and the Philippines by the United States has given a great impetus to the study of the Spanish language in this country. Thousands of people have already gone to Puerto Rico and Cuba and thousands more are expecting to go in the near future to these or the Philippines, to engage in business, to teach, or merely for travel. To all these a knowledge of Spanish, the language spoken exclusively in Puerto Rico and Cuba and among the educated in the Philippines, is absolutely essential. The openings in the public schools of these new possessions for teachers who know Spanish as well as English are many, and at good salaries. But it is useless for one to think of going without some knowledge of Spanish. Fortunately, Spanish is a language easily learned and some excellent texts have recently appeared. Among the best we have seen are these two Spanish readers by Professor Nuñez. With the aid of a Spanish-English dictionary and these two readers the student can obtain a good vocabulary and many of the idioms of the Spanish language.—*First and Second Spanish Readers*, by J. Abelardo Nuñez. [D. Appleton & Co., New York, 1898. 8 vo., pp. 204 and 258.]

Appleton's Guide-Book to Alaska and the Northwest Coast, is by Eliza Ruhamah Scidmore. Appleton's Guide-Books are well known for their fullness and accuracy and this one is no exception. The prominence recently obtained by Alaska on account of the Klondike has made a reliable guide to that region a necessity which has been well-met in this volume. The geography, climate, natives and natural history of Alaska are treated. Sitka, Metlakahtla, Fort

Wrangel, Glacier Bay, the Aleutian Islands, Bering Sea, the Yukon mining regions, are all treated at length and usually well. The nomenclature of places and Pacific coast salmon, as well as a number of natural history facts, are antequated or erroneous, but these are not essentials. There are several excellent maps, including a very complete one of the Klondike. [D. Appleton & Co., New York, 8 vo, 167 pages.]

The opening sentence in *The Industrial Geography*, by Chas. W. Deane and Mary R. Davis, seems to strike the right note, and an examination of the text bears out this initial statement: "The aim in geography teaching should be to give the pupil knowledge of the earth as it ministers to human life." And so those features and conditions are made prominent which most affect human life and human society. Due attention is given to physiography. The maps are clear by virtue of the omission of unimportant details, while the large number of half-tone views are both well selected and well printed. The plan of the book is inductive, as its name indicates. The old method of map questions is happily abolished, but there are scattered through the text numerous suggestive questions that help keep up interest to a high degree. [Potter and Putnam Co., New York, 334 pages, 7x11 inches, 90 cents.]

A book that will be not only of great value but of large interest to thousands of teachers is C. W. Bardeen's third group of *Authors' Birthdays*. There are twelve of them, and Mr. Bardeen says they are twelve that he has enjoyed. Readers who are acquainted with the first two groups will remember that Mr. Bardeen knows how to tell what has pleased him. Others may feel assured that they will find here a large collection of delightful biography, anecdote and extracts, presented in an easy, delightful way. The twelve authors are Franklin, G. W. Curtis, Whipple, D. G. Mitchell, Prescott, Thaxter, Stoddard, Bret Harte, Theodore Winthrop, Stedman, Higginson, and Mark Twain. [C. W. Bardeen, Syracuse, 367 pages, $1.00.]

Elmer A. Lyman of the normal college at Ypsilanti, and Edwin C. Goddard of the university of Michigan have collaborated in the production of a *Plane Trigonometry*. The book is declared to be the outcome of class-room work, and is designed to meet a need for a work that would combine a simple treatment of the principles of trigonometry with a copious list of problems. It is supposed to be adapted to the use of either high school or college classes. Much emphasis is placed upon the use of logarithms, and the student is led to decide from the conditions of every problem what his method of attack shall be. [Allyn & Bacon, Boston, 91+ 33 pages.]

A late number in "The Teacher's Helper" series is an edition of *Evangeline* with an introduction, notes, and a plan of study, by W. F. Conover. The study scheme offered is an excellent one in that it leaves pupils to discover for themselves the beauty of image and sentiment running through the poem. The type is large and clear. [A. Flannagan, cloth 25 cents, paper 15 cents.]

In a small volume of fifty-seven pages Olof A. Toffteen attempts to show that the body of myths and the Bible had a common origin, and that this origin was historical. He sees in the mythology of a race its organic development and derides the theory of poetical story. The argument is largely philological, and will be found interesting to readers who chance to be familiar with the mythical lore of the north. The book is published by the author, 1812 Fifth street, Minneapolis. Paper 50 cents, $1.00 cloth.

A Child's History of Canada by J. N. McIlwraith should be a welcome addition to juvenile literature. Canada has played so large a part in the history and development of America, some of the events have been so romantic, and even to-day there attaches to the country so much of old-world flavor, that the narrative will prove not only instructive but indeed entertaining. After following the four centuries of discovery, exploration, wars, growth and development, the reader will be interested to learn that Canada ranks as the fourth ship-owning country of the world, and that nowhere else on the globe is there so much coal and timber and such valuable fisheries. Her political motto, "Daughter am I in my mother's house, but mistress in my own," well expresses her attitude towards England. The sketch is written from the Canadian standpoint. [D. Appleton & Co., 252 pages, 60 cents.]

THE REPORT OF THE NATIONAL MEETING OF SUPERINTENDENTS HELD IN CHICAGO IS CARRIED OVER UNTIL THE APRIL ISSUE OWING TO LACK OF SPACE.

THE SUMMER SESSION AT INDIANA UNIVERSITY.

The summer school of the university began its existence in 1890, with an attendance of forty-one. Since that time it has steadily grown until last year it enrolled two hundred and forty-one. Beginning with this year it will be a part of the regular university work, and will constitute the first term of the year. The fees have been greatly reduced, special courses will be offered to teachers, and in most cases the work will be in charge of the respective heads of the departments.

The various departments will be in charge of the faculty as follows: Greek, Horace A. Hoffman; Latin, Harold W. Johnston; French, Colbert Searles; German, Gustav E. Karsten; English, Guido H. Stempel and Hamilton B. Moore; American history and politics, James A. Woodburn; economics, Ulysses G. Weatherly; psychology and pedagogy, William Lowe Bryan and John a Bergstrom; mathematics, Robert J. Aley; physics, Arthur L. Foley; chemistry, Louis S. Davis; nature study, D. W. Dennis of Earlham college; law, W. P. Rogers, G. L. Reinhard, and W. E. Clapham. The summer session begins Wednesday, June 20th, and ends Tuesday, July 31.

Robert E. Lyons is the director of the biological station this year, and he will have charge of the work in bacteriology. The other members of the station faculty are: D. M. Mottier, botany; James R. Slonaker, biology; William J. Moenkhaus, zoology; Frank M. Andrews, botany; Leo F. Rettger, embryology; Earl Ramsey, zoology. The work at the station will be divided into two terms. The first term will begin June 26, and end July 27; the second term will begin July 30 and end August 24.

The work of the spring term will begin at the university Tuesday, April 3d. In addition to the regular work special courses have been arranged for teachers. The announcement gives full particulars; this will be sent free of charge to any who make application.

EDUCATIONAL, LITERARY AND GENERAL ITEMS.

Superintendent S. T. Dutton of Brookline, Mass., has been chosen as head of the department of school administration at Teacher's college, New York.

It is reported that Superintendent H. E. Ellis of West Lafayette, Ind.. has been chosen to succeed Superintendent Johnson next year at Franklin, Indiana.

Claude E. Covey, of Jamestown, Ind., has just been appointed to a position as principal of the Indian school at Pine Ridge, S. D. Mrs. Covey will be matron of the school.

B. C. Moon of Kokomo, who is universally accounted an excellent judge of law, a good citizen, and a fine student becomes a candidate for Judge of the supreme court in the fourth district.

It is rumored that President Diaz of the republic of Mexico desires to retire from public office, and that General Reyo who recently became minister of war is likely to be his successor.

Daniel Freeman, who has had charge of a ward building at Crawfordsville this year, has been promoted to the position of teacher of Latin in the high school. Mr. Freeman was graduated at the State normal last year.

Miss Adelaide Thale of Indianapolis has just been tendered the position as teacher of reading and grammar in the eighth year of the Vincennes public schools. She has been a student of the Indiana State normal.

The Northern Indiana Superintendents' Club will meet at Delphi, March 9 and 10. This organization includes some twenty of the progressive superintendents of this section, and their meetings are highly profitable.

The first number of *The University Educator* made its appearance in February. It has thirty-two pages, numerous illustrations, and in matter is devoted largely to the interests of the Eastern Indiana normal university at Muncie.

Professor Alvin C. Payne of Fairbanks has been chosen as an instructor in Vincennes university for the summer term. This is a high honor for a young man who only a year ago was graduated from the State normal school, but his splendid success at Fairbanks during this year shows him to be both enthusiastic and efficient.

The *Purdue Exponent* of February 15, 1900 is a highly artistic number. "Done by the Women of the University" stands at the top of the page. Whether one looks at initial letters or tail-pieces, the cover design, the full-page borders, or the paper and the typography the effect is artistic altogether—a most creditable piece of work.

The Illinois Course of Study, published by C. M. Taylor, Parkerville, Ill., is the result of careful work by the school men of that state, and for purposes of reference and comparison is easily worth the price of fifteen cents asked for it.

It is now settled that the N. E. A. will go to Charleston this year. The South has shown large interest in the association, and feels that in bringing it to Charleston the teachers of the South will receive great inspiration and a much needed impulse forward.

Mrs. Jennie B. Shute, one of the most highly esteemed teachers of Catlettsburg, Ky., was seriously injured by the falling of a door from a passing freight train. For six weeks she has lain in a precarious condition, and her recovery is still considered doubtful.

Professor S. S. Parr, late of St. Cloud, Minn., died February 23. He was for years identified with the educational interests of Indiana, having been professor of psychology at the State Normal and later dean of the normal department at DePauw university.

Professor Frank Beard has offered his resignation as superintendent of the Hartford City schools, his plan being to engage in business either in Marion or Indianapolis. His work in the schools is referred to as highly satisfactory and his resignation is regretted.

Superintendent W. P. Hart of Covington, writes that they have just established a department of history in their high school and have chosen Miss Deirdre D. Duff, Ph. B. of DePauw as head of the department. The enrollment and attendance in the Covington high school are larger than ever before.

Miss Josephine Cox, the instructor of English in the Peru high school, took charge of the same department in the high school of Indianapolis, beginning February 1. E. E. Hostetler will go to Tipton to succeed I. Conner, who has been advanced from the position of science teacher to that of principal of the high school there.

The annual report of Perkins Institution for the Blind at Boston has been sent out by the secretary, Michael Anagnos. It is a most interesting document. Those who are familiar with the work of such institutions will find this a very satisfactory report, while those who are not will be surprised at the work accomplished.

Hervey D. Vories, ex-State Superintendent of Public Instruction and Manager of Vories's Business College, is the author of several books along his special line of work. He has secured copyrights on his methods so they cannot be taught in any other school, and judging by the great school he has built up, there must be merit in his plans.

Elmer E. Griffith, late associate professor of English at Indiana university, died about the middle of February, after a long period of ill health. He had held several positions, as the superintendency at Frankfort, superintendent of the Blind Institute at Indianapolis. He did two years' postgraduate work at Harvard, and stood high among the school men of this state.

About seventy-five teachers from Hancock and Madison counties, Indiana, met in joint institute at Ingalls, February 17th. Superintendent Lee O. Harris read an excellent paper on General Literature. Superintendent Lawrence McTurner gave way to President Jenkins of Butler University who discussed the subject, "City Superintendents." A lively interest was manifest throughout the session.

Professor Calvin N. Kendall, superintendent of the New Haven schools has been chosen as the successor of David K. Goss at Indianapolis. His work at New Haven will occupy him until August, after which he comes to Indianapolis. Professor Kendall is a native of the state of New York, a graduate of Hamilton college, and a teacher of considerable experience in Illinois, Wisconsin and Michigan. He has held his present position at New Haven for five years, and his work there has had much favorable comment.

Robert L. Kelly, for seven years principal of Central Academy, Plainfield, Ind., at present a fellow and graduate student of the university of Chicago, has recently been elected secretary and councillor of the Pedagogical Club of the university. Since the beginning of the present school year he has been practical psychologist in the Chicago physiological school, the only school in the United States devoted exclusively to the training of nervous and backward children, and has recently been placed in charge of the psychophysical work of the Dewey elementary school. Both institutions are departments of the University of Chicago.

The new announcement of courses for the Cornell university summer session for 1900 is at hand. Among the names of the men who will give instruction at that time, we notice especially those of Professor Hiram Corson, long celebrated for his teaching of English literature at Cornell; and Professor David Kinley of the University of Illinois, who offers courses in civics and political and social science. Another new name is that of Professor E. B. McGilvary, lately called from

the university of California to the Sage professorship of moral philosophy at Cornell. He offers courses in ethics. Over eighty courses in all are to be given during the summer session. They cover a wide range of subjects.

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PAIDOLOGY.

Paidology, The Science of the Child, is to be a quarterly magazine, at $1.00 a year, the first number to appear in July, 1900. It is to be the organ of the Paidological Club, whose headquarters will be at the Department of Paidology of the Kansas State Normal School. This Club and Magazine are to be strictly confined to the study of children in scientific and practical ways.

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A JOURNAL FOR THE PROGRESSIVE TEACHER.

WALTER W. STORMS, Editor.

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THE INLAND EDUCATOR.

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Business is Business. We wish to endorse an editorial paragraph that appeared recently in *The Moderator*, because it says what we have wished to say, and says it so well. "Teachers, do you owe publishers anything? Has your time of credit expired? Don't wait for a statement or a bill. It costs a publisher $25 to send out 1,000 statements or bills. That $25 frequently represents the profits on the transaction. If, however, you do get a reminder of indebtedness, don't fly the track, show temper, offended dignity, and all that. Learn business ways, and even if a mistake is made, and you are dunned for something which you do not owe, promptly and courteously make known the error. Publishers intend to do the square thing, and willingly rectify errors."

* * *

A Conundrum. Have readers of THE EDUCATOR ever noticed the peculiar manner in which some people move during the intervals in a long program? To illustrate, suppose there is an educational convention in session, and an address has just been given. At its close there are always some who find it necessary to leave the room. Most of these do so at once so that the program may be resumed. But nearly always when quiet begins to be restored the stragglers commence to move—as if they just then waked up to the fact that they wished to retire, and apparently with no regard whatever to the progress of the meeting. WHY?

* * *

Normal Schools In Ohio. The friends of special training for teachers have made a strong effort in Ohio during the past winter to secure legislation that would authorize the establishment of state normal schools in that commonwealth. A bill providing for a commission of five persons who would locate and establish five normals for the state was lost in the House by a vote of fifty-two for the measure and forty-four against it, fifty-six being necessary to pass it. The assembly was asked by over 15,000 petitioners to pass the bill, and sentiment in its favor appears to have been considerable. The opposition came partly from the rural representatives who claim, not without some reason, that the rural schools derive small proportional benefit from normals because the teachers so trained do not stay in the country districts. Some of the newspapers have urged the humorous argument that to establish normals for the teachers of Ohio would reflect discredit upon the present efficiency of the highly endowed teachers of the state. The numerous colleges and the private normals have naturally enough been opposed for reasons all their own; while the Toledo Centennial, which gets a half million dollars from the state, also had a chilling effect upon the legislature and their tax-paying constituency. But there is little doubt that the suppression of the movement is more than temporary. The example of other states cannot long be ignored. The Wisconsin system, discussed at some length in THE EDUCATOR for September, 1899, has some admirable features, and it is just possible that Ohio might find it worth while to examine them.

* * *

Good Words For American Schools. Not long ago THE EDUCATOR called attention to the interest in American schools shown by the French commissioners of the Paris exposition. An article of some length in *Education* for March, 1900, speaks of a wider foreign interest still in our school system. Coming at a time when there are those here and there who are wont to decry the efficiency of our schools the comparison will certainly be interesting; and inasmuch as it is made by foreigners themselves it may even be reassuring. American schools are not perfect. We should never let go of this fact, but the comparison shows that however much we may yet lack we have gone

farther in a half century toward meeting the educational needs of the people than the old world has in all the centuries. Even in England the elementary schools are but just now fully devoted to the common people. A distinguished advocate of free schools in England, Dr. J. H. Hollowell, writes: "There is no comparison between the amount of voluntary educational work, especially in the higher branches, in England and the amount done in America. In America there is no such idea as that you can overeducate a man, but here one finds the idea like a pestilence." Another Englishman, Thomas Burns, says of American schools, "What impressed me greatly was the stress laid upon the necessity of good business habits; such as, accuracy, neatness, promptness, dispatch, energy, and all those general habits which are the essentials of a successful and intelligent business career." We find, too, that Dr. Compayré has complimented Dr. James by saying, "However original and profound his conceptions he has the skill to make them clear, intelligible and accessible to all." The N. E. A. is characterized thus:—"University professors elbow the teachers of primary schools; the principals of colleges confer with the directors of normal and high schools; in other words the fusion of the three orders of instruction is something more in America than a dream or a vague aspiration,—it is a reality. The work of public instruction is more highly esteemed in this country, where the school is a matter of interest to everybody, than in Europe."

* * *

Don't Score One for the New Spelling. The complexity of administration in the university of Chicago must be held responsible for some wrong impressions. Shortly before the March issue of THE INLAND EDUCATOR went to press the statement appeared in the *University Record* that "the congregation" had agreed to adopt certain new spellings in the official publications and journals of the university. This was considered authentic and reported in our March issue under the caption "Score One for the New Spelling." The *Record* of March 9 has this note as the action of the university "senate": "The recommendation of the administrative board of the University Press that the list of words with changed spelling accepted by the National Educational Association be adopted for use in the official publications and journals of the university was disapproved." Whether or not there is a still higher power yet to be heard from which may endorse or reverse the decision of the "senate" THE EDUCATOR does not know, but it promises to watch the *Record* and faithfully report the latest.

* * *

Harmony Among Superintendents. One of the things that impressed the observer at the recent Chicago meeting as a most favorable sign of the times was the good feeling that seemed to prevail among the educational leaders. However great may be the seeming unrest in many school centers, and however important may be the educational problems coming up for solution there is practical agreement among educators as to what seems best, especially in school administration. Even in educational theory there is but one opinion upon the large questions. The proposition that the school exists first and always for the good of the child, has universal acceptance and so becomes a unifying principle. This standing together will have a continuous influence in creating confidence among the people.

* * *

New York Teachers' Magazine Suspends. In the March issue of the *Teachers' World* Joseph S. Taylor makes the candid announcement that owing to circumstances beyond his control the *New York Teachers' Magazine*, which he has edited for a year or more, suspends publication indefinitely. Thus is dispelled another of the illusions that evidently lead men to think of school journals as quick and easy avenues to wealth. If all the teachers that a given paper is designed to reach would really subscribe, and if all who subscribe would pay, the careers of some papers would be less hopeless. But alas! Mr. Taylor will have the sympathy of educational publishers and editors generally. He declares that his work has been a labor of love, and the financial remuneration zero. The *Teachers' World* voluntarily fills out all unexpired subscriptions.

* * *

The New Normal at Chicago. The new school made possible by a generous endowment from Mrs. Emmons Blaine is approaching completion. It is to be known as CHICAGO INSTITUTE, and the preliminary announcement recently sent out shows that the school will have some interesting features. It will be remembered that Colonel Parker takes with him as faculty nearly all the teachers who were with him in the Cook county normal, and it is understood that he is to have full freedom here to work out his educational ideas. There is to be an academic department where "an attempt will be made to provide ideal conditions for the education of children and youth between the

ages of four and eighteen, in order to prepare them for the duties and responsibilities of life and for higher education." This department is to commence with the kindergarten, and will embrace an elaborate course in nature study, home economics, physical training, manual training and the arts. "It will be the aim of the pedagogic school to offer to teachers the best possible training." Candidates received in this department "will be considered on probation until the faculty decides that such candidate possesses the natural gifts for a successful teacher." If the school will firmly adhere to this proposition its usefulness and success will be at once assured.

* * *

A Unique Newspaper. It is safe to say that during the seven days beginning Tuesday, March 13, no other paper in the world had as many readers and none other had as much said about it in the press of the country as *The Topeka Daily Capital* The announcement had been made to the ends of the earth that Rev. Charles Sheldon would fully control that daily during this week, and would attempt to show what he thought a daily paper should be as edited from a Christian standpoint. Both expectation and curiosity ran high, and there is no doubt that many were disappointed, when the first issue appeared, to find that there was nothing sensational about it. Mr. Sheldon was neither arbitrary nor loud. On the contrary he was modest and rational, and was careful to say that his experiment was not intended to set up his edition of the *Capital* as a model of what Jesus would do. It was merely an honest expression of his own views and his own convictions. He defines the word "news" as anything in the way of daily events that the public ought to know for its development and power in a life of righteousness." His edition was non-partisan, though he granted that a Christian paper need not be neutral either in municipal, state or national politics. On the liquor problem he stood for absolute prohibition. He abhors war, and states candidly that he does not know what is the Christian answer to the question of "expansion." He declares himself a socialist so far as socialism means Christian Brotherhood. The relief of suffering humanity in India and elsewhere was held to be more important than news from the war in South Africa, or the political squabble in Kentucky. The opinions expressed regarding the experiment have been as diverse as the poles. A secular press finds much to commend, the pulpit finds much to condemn. The sad thing is that so many of his detractors persistently misconstrue his avowed purpose. THE EDUCATOR considers the experiment worth while if it should accomplish nothing more than call a halt upon sensationalism in newspapers and make us ask seriously and honestly what are the things most worthy of our daily thought?

* * *

"One-Man Power." This phrase has been the text for many a talk since Graham H. Harris used it in his Springfield speech December last. Conservative school men have maintained that the educational interests of a community require the delegation of power by the people of the community into the hands of an educational expert who shall be held responsible then for the excellence and the efficiency of the schools. This is the thing that Mr. Harris has mis-named "one-man power." Educators rightly enough protest against the name though they are persistently demanding the thing. The great meeting of the superintendents at Chicago was prefaced by an evening session devoted to this subject. Dr. Nicholas Murray Butler, President Wheeler of California, and President Eliot of Harvard were the speakers. Dr. Butler spoke as follows: "The board of education is not the proprietor of the school system, and to the best of my knowledge and belief it has no employes. The superintendents, principals and teachers are officers in the community, appointed and set apart for the community. We are told that to have an expert as superintendent and to ask him for advice, with a predilection in favor of following that advice, is the establishment of one-man power. That is amusing. To what better are we entitled, and what can be more democratic, than to put a public servant out in the light of day, prescribe his duties, compel him to perform them in daylight, and to hold him responsible? If that is one-man power and undemocratic, then some one will have to make the most of it, because I think an intelligent and progressive democracy intends to have a great deal of it—more every year, and more in every branch of our public service." President Wheeler said, "Democracy is undoubtedly of the people, but none the less it is requiring continually and increasingly expert service. We have had expert professional service in the democracy from the beginning. I hear in California the cry that 'the schools must be kept in touch with the people,' as a plea against the placing of experts, chosen as experts, in the schools. He declared that men selected only because of party loyalty and making no other claim for fitness would always be a hindrance to the perfecting of our

schools. Dr. Eliot maintained that the right individual in the right place, as against incompetent bodies was one of the expressed ideals of democracy. "I say the school board should determine the general policy. Is it to execute its own policy? Not at all. That is the trouble with most city school committees at this day. A good school committee wants two experts in two different fields, having two different kinds of quality and experience. It wants a business agent and an educator. The expert is simply the man or woman who knows how to do his or her task."

* * *

Hobbies.

In the first place, have one. In the next place, ride it. In the third place do not let it ride you. In giving this bit of gratuitous advice let it be understood that we should define a hobby as a certain enthusiasm in an occupation for one's leisure hours, that differs as widely as possible from one's regular business and that may wait indefinitely for attention when duties prevent its indulgence. What is not meant by a hobby is an extreme view of some phase of one's business which is urged at every chance, sometimes *ad nauseam*, and which is likely in turn to influence for the worse a sane view of things in general. Perspective and proportion are easily distorted.

The strongest argument in favor of a hobby is found in the well-acknowledged fact that our intense life needs diversion. This is particularly true of the teacher. Hardly anything can more depress, hardly anything can more exhaust a teacher's vitality than to go home fatigued from the schoolroom with a bundle of manuscripts to pore over and grade. It is less the added amount of work, though this is bad enough, than the depressing sameness. Such work brings no elasticity of spirit; there is nothing in it to stimulate; at best it is drudgery. Such work, a little of it, may require doing provided it be done as a part of the day's work. It can hardly be in order during the hours that belong to recreation or diversion.

Where then shall teachers seek diversion? That is a large question, and no doubt teachers generally are quite able to answer it for themselves. It is certain that they are rarely without something to do. Books and periodicals go a long way in helping the solution, though in many cases these alone, being so allied to the teacher's work, leave something to be desired. And here comes in a second justification for a hobby. It is easy to fritter away every week many hours that are not really idle, but that still count for nothing on the credit side of our living. They are purposeless hours. If they could be absolutely idle hours they would bring rest and so have a certain value. But simply to "putter around," as the old folks might say, accomplishing nothing and still going about under a certain impulse that precludes rest, must count as a kind of unintentional and unsatisfactory dissipation. Merely to realize that valuable time is passing unimproved is wearing to the conscientious person who feels that time is opportunity. Then is when we need the hobby. The teacher who goes home at night feeling that there is delightful occupation for the evening is already rested. Saturday morning's chores are eagerly dispatched when the afternoon will bring the opportunity of doing something we especially enjoy.

There is no rule to determine what an individual's hobby may be, except, of course, that it will follow some line of his predilection. One teacher known to the writer has a peculiar fondness for carpenter's tools. He is always planning to build something, and would much rather put up a shelf or towel rack than have the carpenter do it. One friend indulges a fancy for rare old books. When he goes to a strange city you may be pretty sure that the first place he will look up is the second-hand book stores. Another friend has a passion for special editions of plays. Still another is a collecting geologist. One has an expensive passion for fine horses. Others have art in some one of its forms. A notable example of a hobby is that which Gladstone had for chopping trees. It will be remembered, too, that he had a peculiar fondness for Greek and found both recreation and rest in making translations of Homer. But it matters not so much what one selects as a hobby. It is well if it comes as a natural possession; and well, too, if it has intrinsic value besides affording diversion and rest. The person with a hobby is likely to be well informed upon at least one subject, and to that extent entertaining to others. But after all and most of all these special enthusiasms are for the individual more than for his friends. If the object of the enthusiasm is worthy we shall find both pleasure and profit in devoting ourselves to it in accordance with our taste and our leisure.

THE CHILD AND THE SCHOOL.

VIEWS OF REPRESENTATIVE MEN.—III.



W. P. KANE,
President Wabash College.

SOME FUNDAMENTALS IN EDUCATION.

By PRESIDENT W. P. KANE.

YOU have asked me to state in a very brief space what might be termed my educational creed. The use of the word creed suggests that you desire propositions rather than arguments.

FIRST, AS TO CHILDHOOD.

In my judgment the most significant and encouraging feature of educational advance to-day is the increased and intelligent concern about the child. The old adage, "as the twig is bent the tree's inclined," is peculiarly true in the educational sphere. I do not under-value the interest underlying the discussions about high school and college curricula and methods, but I place above these the importance of the first steps in education. These condition all that comes after. Weakness here means defect throughout; serious error here means irreparable loss.

SECOND, AS TO TEACHERS.

The very best is none too good for the

beginners. The theory that anybody will do to teach children is out of date. By natural ordination the mother is the first and most potent educator. Next to her stands the "primary." Her work makes heavy demand upon both talent and culture. No outlay of money is more wisely directed than in commanding these for the children. Later on we can better afford to be stinted in the interests of economy if need be. The really capable primary teacher is the peer of a university professor. She deserves as much both in honor and in compensation. We shall never be upon safe ground until that truth is recognized not only theoretically but practically.

THIRD, AS TO AIMS.

The chief aim is not information but growth. The problem is not first to furnish the young mind with useful knowledge, but to stimulate and direct the unfolding powers. The utilitarian theory of education is nowhere more false than when applied to childhood. The tasks set are not an end but a means. The teacher should regard first of all the fact that the child is a bundle of possibilities waiting to be changed into potencies. Instruction must be so adapted that it becomes food and stimulus for the awakening faculties. When this is wisely done information will be incidental and will take care of itself. The wise gardener does not try to make fruit but to foster growth. Nature does the rest.

FOURTH, AS TO METHODS.

What the teacher is appeals to the child more than what the teacher knows. Life begets life. Physical conditions are not unimportant, apparatus and facilities are of value. But they are secondary. Garfield's familiar tribute to Mark Hopkins applies to the primary not less than to the university. Nothing equals personality and nothing can take its place. Inspiration is two-thirds of achievement. We are in danger of running daft after theories and fads.

TALKS ON THE STUDY OF LITERATURE.—VII.

By EDWIN A. GREENLAW, A. M.

THE first scene of the last act of *Macbeth* is one of the most significant passages in Shakespeare's works, yet it is written in prose instead of in blank verse. As Dr. Hudson suggests, the fearful agony which the queen suffers is best portrayed in the simple, tense words and sentence structure of prose. There can rightly be no rhythm, no melody, no regularity of accent, in such a scene as this. In these passages which are so crowded with meaning, the master uses prose, not verse, and the fact indicates that, in some respects at least, prose is a more effective instrument for the expression of tremendous passions than poetry.

The infinite pathos of the scene will not escape the reader. We have not entirely lost sympathy for Lady Macbeth as we have for the king, because she has had no part in his later crimes. Besides, her words here prove that she suffers all for him and that she is concerned chiefest for his safety. We see also that her punishment is far worse than death, for her nature, sensitive, unused to crime, unable to bear the consciousness of having sinned, is so terribly shaken that she suffers horrors beside which the tortures of hell can be no more severe.

The second scene is significant because it shows how rapidly the nobles are deserting Macbeth, while in the third scene we are once more introduced to the tyrant. A surprising change has taken place in him since we last saw him, at the witches' cavern. In the first ten lines we have the expression, not of courage and confidence, but of fear bolstering itself up by professions which it knows to be false. It is as when a boy, passing late at night a house reputed to be the haunt of ghosts, whistles loudly in an attempt to assure himself of safety. He will not confess his fear, but seeks to disguise it by a show of boldness; so Macbeth here professes the utmost confidence in the prophecy of the witches, in a vain attempt to deceive himself. The real condition of the king's mind becomes evident when the servant, whitefaced and trembling, enters to

report the approach of the English army. The dignity of sovereignty is utterly wanting, and in the causeless scathing words addressed to the servant we read the fact that Macbeth is, indeed, "sick at heart."

"I have lived long enough: my way of life
Is fallen into the sear, the yellow leaf,
And that which should accompany old age,
As honour, love, obedience, troops of friends,
I must not look to have; but, in their stead,
Curses, not loud but deep, mouth-honour, breath,
Which the poor heart would fain deny, and dare not."

If there is need of any further proof that reason itself is tottering on her throne, we have it in the incoherent talk of the king with the physician, in his orders, thrice repeated, that his armor be put on, and in his final order that it be pulled off and sent afterwards.

In the fifth scene, further evidence is given of Macbeth's sufferings. "I have supped full with horrors," he says, and when the news is brought to him of the death of the woman who planned and sinned and suffered for him, he can say nothing but, "She should have died hereafter." Then his experience is summed up in words which are the echo of the old saying, "Vanity of vanities, all is vanity."

"Life's but a walking shadow, a poor player
That struts and frets his hour upon the stage
And then is heard no more; it is a tale
Told by an idiot, full of sound and fury,
Signifying nothing."

This, then, is Macbeth's philosophy of life. Originally gifted with the highest powers of leadership, a splendid general, trusted by his sovereign and loved by his soldiers, he appealed strongly to our admiration. We knew that he was fitter to reign than Duncan; he knew that he was fitter. But herein lay his mistake. No matter if one be capable of discharging the duties of high office, no matter if one be unjustly deprived of one's rights, this fitness and this right do not justify wrong acts. At the root of Macbeth's downfall lies selfish ambition. It is right that men be ambitious; but when their desire for advancement masters them, then let them beware lest their end be as the end of Macbeth. His story is but one more rehearsal of the pitiful tale of the vanity of worldly success when gained at the expense of honor, of fidelity to friends, of regard for principle. He who is traitor to his manhood meets ruin as inevitably as he who is traitor to his king.

Since one's philosophy of life is the result of the reaction of self upon environment, it is small wonder that Macbeth, having lived a life of selfishness and crime, should summarize his view of the meaning of life in terms so bitter. But we do not accept his summary any more than we acknowledge the correctness of the view expressed by that royal investigator who made his desire for wisdom the excuse for tampering with every form of indulgence and excess. Life is not vanity to those who live rightly, neither is it a tale told by an idiot, signifying nothing. It is no defense to plead that one seeks to know life upon all sides, nor is his defense any better who says that he deserved high place and that others were in his way. We do not receive our philosophy of life from those who, having proved traitors to all the finer instincts of humanity, seek to persuade us that all is vanity and vexation of spirit.

The end of the tragedy soon comes. The messenger's announcement that Birnam Wood was moving toward the castle drives the king beside himself. The prophecy is to be fulfilled, then, but at what cost. Well-nigh insane by this new catastrophe, the king abandons his only advantage and rushes out from the strong castle where he had at least the superiority gained by fighting on the defensive, to engage his enemies in a last vain struggle in the plain below. And of Macbeth, as of one other, it may be said, "He went out, and it was night."

STUDIES AND PROBLEMS. ACT V.

Scene 1.—1. This scene should be compared with the fourth scene in the third act. Then Macbeth suffered, while now it is Lady Macbeth. What changes have taken place in each of them since the banquet scene in Act III? What then have been the effects of crime upon each? Write a paragraph upon this topic.

2. In this scene find evidence (a) of Lady Macbeth's supreme love for her husband; (b) that she suffered for his sake; (c) that she was not a hardened criminal, brutal, without pity or feeling.

3. Do you feel toward Lady Macbeth just as you feel toward the king?

4. In this scene the real tragedy of the drama is shown. Why? Can death be as terrible as the sufferings of Lady Macbeth

now? Mark in your books every significant expression, noting particularly phrases which indicate the terrible agony which the queen suffers, and those expressions which add to the pathos of the scene and win our pity for the sufferer.

5. Note the use of prose.

6. Try to form an idea of the terrible anguish Lady Macbeth must suffer when awake, if in her sleep she acts as is here portrayed.

Scene 2.—1. What is the purpose of this scene?

2. How do the nobles refer to Macbeth?

Scene 3.—1. This scene should be compared with the first; we now see more clearly the changes that have taken place in Macbeth.

2. When did the king last appear? Do you think Shakespeare had any purpose in keeping him from view so long? Does Macbeth really believe in the witches' prophecy; What is the significance of his treatment of the servant? Read these lines very slowly pencil in hand.

3. Note that the king calls for Leyton repeatedly, and after that person appears, observe the incoherence of Macbeth's sentences. How many times does he call for his armor? After it is on is he satisfied? Interpret this.

4. Make a list of adjectives which you think best describe Macbeth's mental condition at the time of this scene.

Scene 5.—1. Note carefully all expressions which show Macbeth's mental condition. Write a paragraph based upon this topic, giving quotations to support your statements. In particular, observe (a) indications of his sufferings and their effects; (b) his view of life; (c) his reception of the news of the queen's death; (d) the effect of the messenger's report.

2. Why should a man who has lived as Macbeth lived, hold such a philosophy of life as is expressed in this scene?

3. In view of what Macbeth said regarding the castle at the first of the scene, why did he leave it?

4. Make a list of unusual and obsolete words found in this scene.

5. Be prepared to name and to state the value of the principal rhetorical figures in this scene.

Note how rapidly the drama is hurried to the close. The fierceness of the battle and the breathless struggle for life are suggested by the short, condensed scenes. Even in single scenes several distinct incidents are narrated, suggesting in the violation of unity in composition, the confusion of the battle.

Scene 8.—1. Note that Macbeth is not slain before us.

2. Do you feel the pity for Macbeth that you felt for the queen.

3. Was death Macbeth's punishment?

GENERAL EXERCISES.

1. Write as many reasons as you can for calling this drama a masterpiece.

2. Read once more the critical opinions quoted in the introduction to your text.

3. Collect and compare allusions to blood, death, darkness, and sleep, found in this drama.

4. Show how Shakespeare makes the dramatic background, the natural surroundings, contribute to the effectiveness of the drama. Mention as many instances of this as you can.

In addition to the general exercises suggested above it will be found interesting and profitable to employ some time, at the period of review in composition work. The problem of composition is simply the problem of getting the pupil to express his thoughts. To realize this end, two things are necessary: the student must be interested in what he is endeavoring to write about; and he must know enough about the subject to have something of his own to say. It is confidently believed that the study of *Macbeth*, or of any other masterpiece, along the same general lines as are here laid down, will meet these two requirements. Progressive teachers of English have long since recognized that a sure way to stifle every spark of originality and to cause pupils to vote the composition lesson a bore, is to permit them to write upon general subjects; upon abstractions such as "Liberty," or upon moral topics such as "Advantages of Industry," or upon such vague and all-embracing themes as "History." We need that which is near to the pupil's life, something of which he possesses first-hand knowledge. So the tendency has been, of late, to encourage pupils to write upon subjects of their own selection; upon the last ball game, or the advantages of literary societies, or a description of a pocket-knife.

Without doubt this second state is prefera-

ble to the first; but the query may well be made as to whether all work in composition should be confined to similar lines. Is it not true that the pupil must be at the time of writing interested in a particular subject and possessed of intimate knowledge concerning it? If a ball-game has appealed especially to a certain boy at a certain time, well and good; he shou'd write about it. And if he has a particular interest in a particular knife, that subject, also, is profitable for discussion. But what if he have no particular thought upon some such subjects. The others write upon those subjects, so he thinks that he must do the same, and the result is that wishy-washy, colorless jumble of pale and sickly thought that is so familiar to every teacher of composition.

Why not encourage the selection of subjects from the studies in which the pupil is interested? Nearly every branch in the school program affords splendid material. These things he knows about; these he is interested in. He is not in school to observe pocket-knives, or rocks, or stretches of lake-shore; he is there to study, and at least a fair proportion of his essay-subjects should be drawn from the work which occupies the first place in his thoughts.

What better opportunities can the teacher find for getting live, original compositions from a class than at the time when they are deeply interested in such a master-work as *Macbeth?* Therefore, in the reviews as well as in the daily class-work, frequent practice in written expression should be given. If a boy is set problems to work out by original thought, abundant material for paragraph work will be found; while character sketches, studies of figures, and summaries of masterpieces, will supply subjects for compositions of greater length.

In closing this series of articles upon the study of literature, it is proper to review some of the central thoughts which have formed the basis of the discussions. The aim, in general, has been to encourage teachers to consider the broad subject of method, rather than the narrower and more mechanical matter of devices. The teacher should employ one plan of conducting a recitation or another, not because some book says so, or because some successful teacher advises it, but because it rests on sound principles. The great objects of the study of literature are to inform the understanding by contact with the greatest thoughts of mighty thinkers; to give breadth of view through looking upon the universal rather than upon the petty and individual; to increase the power of original thought by constant appeal to the pupil to search, to find, and to interpret for himself; to awaken a sense of beauty and an admiration for a noble thing nobly said; and to develop character in what is perhaps the most effective manner possible to the teacher in the secondary school.

Boys and girls of high-school age resent professedly moral instruction, but they take it to heart when it is lived before them by noble men and women, in books as well as in life. Those who have been analyzing character as portrayed in literature are quick to observe traits, admirable or to be deplored, in those with whom they come in contact; and a boy who observes how actions reveal the man is apt in consequence to be more careful of his own actions. The ideal of the teacher of literature should be to do all in his power to develop that culture which is founded on noble character; a culture which breathes the spirit of service, has due regard for the rights and the feelings of others, loves not the base and the trivial but the ideal and the lofty, and measures success by higher standards than fame or wealth.

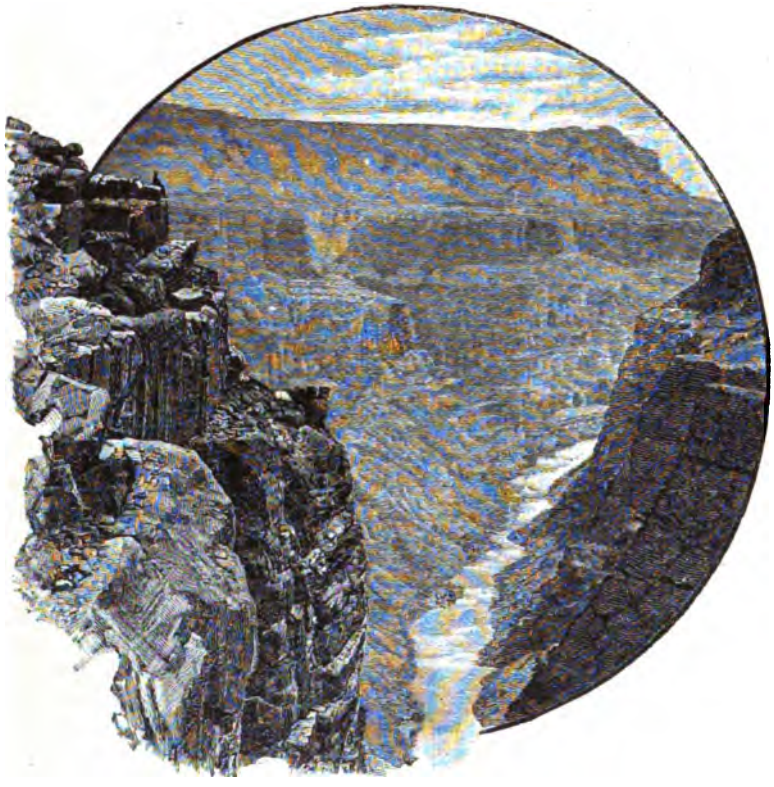
NORTHWESTERN UNIVERSITY.

HOW TO USE THE NEW GEOGRAPHIES.—V.

By CHARLES R. DRYER.

THE editor of a prominent educational journal expressed the opinion not long ago that the Colorado river is hardly entitled to mention in the geography because of its lack of human interest. For the greater part of its length it is neither navigable nor approachable. There are no cities or towns upon its banks, it turns no man's mill,

waters no man's vineyard, carries no man's goods. For more than a thousand miles it is not spanned by a single bridge, and can be crossed only by way of a few difficult and dangerous trails which lead to equally dangerous ferries. Railroads avoid it at any cost, and neither the cowboy nor the mine prospector find it attractive. It is a portion of the face of the earth where nature maintains her sovereignty unquestioned over a realm in which man and his affairs are too insignificant to attract a moment's attention. Yet perhaps it ought not to be left out of the geography.



CANYON OF THE COLORADO.

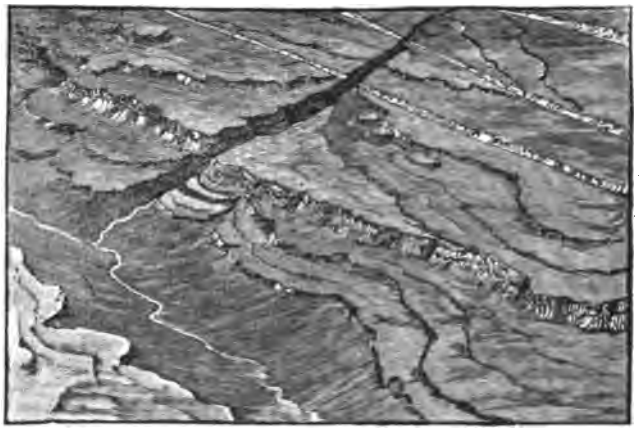
If we take the map and run an ink line around the divide which borders the basin of the Colorado system, we shall find that about three-fourths of it is mountain crest and the other fourth plateau and desert. The mountains that stand around about it are among the most massive and lofty in the land; on the east the Mogollon and Zuni in New Mexico, the San Juan, San Miguel and Park Range in Colorado; on the north the Sweetwater and Wind River in Wyoming, and on the west the long, straight sweep of the Wasatch through central Utah. In Nevada and southern California a waterless desert pushes its borders close up to the main stream. If we make the Colorado system stand out among the details of the map by inking all the streams that belong to it, the pattern comes out as a bent trunk with a few straggling limbs mostly on one side, in strong contrast with the luxuriant and symmetrical ramifications of the Mississippi. The rainfall map on page 129, (Frye's Advanced) shows that the Colorado basin has less than ten inches of rainfall except upon the mountains, and the mystery is that a great river can exist there at all. The relief map on page thirty-four fails to give a good idea of the relief of the basin. It is not a valley with sides sloping from the divide to the river but a series of broad plateaus which increase in height from 5,000 feet in Wyoming to 10,000 in Arizona. The general slope of the country is toward the north, while the river flows in the opposite direction against the slope. Does the river then flow up hill? How it avoids doing so and cuts many curious capers in the effort will appear from a more detailed account of it.

The Green river, which is the extreme headwater branch of the Colorado, rises near Fremont's Peak and flows southward. At the Wyoming-Utah line it encounters the Uinta mountains which stand directly across its path. It does not stop at their foot but flows directly into them almost to the crest, then apparently discouraged, turns aside and follows a broad valley into the edge of Colorado. It does not, however, go around the end of the mountain range which fades out a few miles farther to the east, but turning

a right angle cuts directly through it by the canyon of Lodore whose walls rise almost perpendicularly two or three thousand feet on either side. Having thus overcome its first great obstacle its troubles are only begun. South of the mountains the surface of the country rises by a series of steps which slope gradually upward then drop suddenly to a lower level forming a line of precipitous cliffs. It is like a stairway which has been tilted up until each tread slopes down toward the riser of the next step above. This arrangement may be imitated by laying a line of books flat on the table, with the end of each overlapping the end of the next one. The slopes are fifty to seventy miles long and the cliffs two or three thousand feet high. The structure of the region is shown in a general way in the picture. A river cannot flow over or across such a country as this, but it can cut through it, and that is what the Green river does by a series of canyons, whose walls rise higher and higher down stream until at the cliff line they suddenly drop down to the river level as appears in the middle of the picture.

The Green river unites with the Grand to form the Colorado, which continues its course to the south through a succession of very crooked canyons of moderate depth compared with those above and below. At the mouth of the Paria, Marble Canyon begins, (it is located wrongly on Frye's map of Arizona) and its walls rise gradually in sixty-five miles to nearly 4,000 feet in height. Here the Little Colorado comes in from the east and the river turns boldly westward into the most lofty plateau yet encountered. For more than 200 miles it flows through the Grand Canyon at the depth of a mile or more below the general level. At the western border of Arizona the walls of the canyon drop suddenly to near the river level and a few miles beyond the river turns to the south. In its lower course it resembles the Nile in the fact that it traverses a desert and overflows its flood-plain. (See pictures on page 37 advanced book.) Not only does the trunk stream, for about 1,000 miles as the river flows, lie at the bottom of a steep walled trench, but every tributary stream up to the last small rivulet, flows in a trench of proportionate depth, so that the whole country is cut up by a maze of canyons into irregular, isolated blocks, like a Chinese puzzle made for giants to play with. A strange river, truly, which flows from a country one mile above the sea, to a country two miles above the sea, yet descends rapidly all the way, which laughs at all obstacles, and turns not aside for mountain ranges or plateaus of solid rock which rise across its path, but cuts through them as easily as a rising brook carries away a child's mud dam.

When the mind first grasps this problem and gropes for an explanation, the first thought is that "some great convulsion of nature" must have broken the crust of the earth and made a crack along which the river had only to follow. But on second thought the occurrence of a crack a thousand miles long which exactly imitates the characteristic windings of a river, and is in some places ten miles wide, seems highly improbable. When we take into account all the tributary canyons, each exactly adjusted to the size of the stream which flows through it, and undertake to assume that the crust of the earth has been broken up by such a network of cracks, our theory breaks down from sheer absurdity. The Colorado plateaus are broken by cracks which extend many miles, but they are not wide enough to admit one finger, and the river does not follow them. It flows directly across them with the same indifference that it manifests for all other features. The whole system from source to mouth and from top to bottom shows unmistakably the marks of stream erosion, and we are driven



COLORADO PLATEAU.

to the conclusion that the river occupies the country by right of preemption, that it was there before the mountains were brought forth, before the earth crust was broken and the mighty plateau blocks were upheaved. When it began its course it flowed like other rivers down the slope of the country, and it has maintained its course while the mountains and plateaus were rising across its path. The upheaval was so slow that the river was able to cut them in two as fast as they rose, and to maintain substantially its course and level. It has played the part of a horizontal band saw to a log pushed up against it. The result is the longest and deepest cut in the crust of the earth that has anywhere been made.

The walls of its canyons expose the edges of nearly horizontal strata of limestone, sandstone and shale more than a mile thick down to the primitive fundamental granite. Nowhere else has the skin of Mother Earth been so deeply scratched—clear to the bone—and the leaves of the great stone record can be read like an open book. No other region has been found so rich in revelations of the earth's history. From it we have learned to read the record of creation,

"in characters
of rock and fire the scroll."

It has been the Rosetta stone which has enabled us to interpret the hieroglyphics of the Creator written all over the face of the earth. From it we have learned that nature has "great convulsions" as rarely as men do, and that her greatest results are accomplished by slow and gentle processes through the long lapse of ages. The Colorado river has been able to accomplish its uneqalled task by the forces resident in the light and wandering air, and in the soft and slippery water. By the work it has done nature has taught us in the most impressive manner that weathering and stream erosion which, in the brief minute of human history, effect a scarcely appreciable change, have been the chief agents in shaping the land surface into sculptural forms of infinite variety and beauty. By the study of this lesson the sciences of geology and geography have been revolutionized and in the light of it the text-books have had to be re-written.

The basin of the Colorado river has not only contributed more than any other region to our knowledge of earth lore, but it offers for our pleasure and uplifting some of the grandest scenery on earth. In this respect it is altogether unique and unparalleled. Words are powerless to describe it, and pictures seem ridiculous. Here let Major Dutton, who has studied it most thoroughly and seen it with eyes equally appreciative of its artistic and scientific features, do what he can to help us. "Those who have long and carefully studied the Grand Canyon of the Colorado do not hesitate for a moment to pronounce it by far the most sublime of all earthly spectacles. It is more than 200 miles long, from five to twelve miles wide, and from 5,000 to 6,000 feet deep. . . . To the conception of its vast proportions must be added some notion of its intricate plan, the nobility of its architecture, its colossal buttes, its wealth of ornamentation, the splendor of its colors, and its wonderful atmosphere. . . . The space under immediate view from our standpoint, fifty miles long and ten to twelve miles wide, is thronged with a great multitude of objects so vast in size, so bold yet majestic in form, so infinite in their details, that as the truth gradually reveals itself it arouses the strongest emotions. Can mortal fancy create a picture of a mural front a mile in height, seven to ten miles distant, and receding into space indefinitely in either direction? If the wall were simple in its character, if it were only blank and sheer, some rest might be formed in contemplating it. It is deeply recessed by alcoves and amphitheatres receding far into the plateau beyond. Between them the promontories jut out, ending in magnificent gables. Thus the wall rambles in and out turning numberless corners. Numerous detached masses are also seen flanking the ends of the long promontories. These buttes are of gigantic proportions, and yet so overwhelming is the effect of the wall against which they are projected that they seem insignificant.

In all the vast space beneath and around us there is very little upon which the mind can linger restfully. It is completely filled with objects of gigantic size and amazing form. Everything is superlative, transcending the power of the intelligence to comprehend it. The grandest objects are merged in a congregation of others equally grand. If any one of these stupendous creations had been planted upon the plains of central Europe it would have influenced modern art as profoundly as Fusiyama has influenced the decorative art of Japan. The tone and

temper of the landscape are constantly varying. It is never the same from day to day, or even from hour to hour. Every passing cloud, every change in the position of the sun, recasts the whole. At sunset the pageant closes amid splendors that seem more than earthly."

The Colorado river is superhuman and can never be humanized. Its basin will never appear in the statistics as producing corn or wheat or cotton. It has so far yielded no treasures of gold or silver or iron or coal. It will never figure in human history as an agricultural or manufacturing or mining region. Its commerce and its population will always be of the scantiest. It contributes nothing to the material support and welfare of the human race. Yet are there not human interests higher than commercial? It has made the largest contribution to scientific knowledge, and to the present and coming generations it offers scenery of indescribable and almost insufferable grandeur and beauty. Is it worthy of mention in the geography, or did God make a mistake when he made it?

MATHEMATICS AND PROGRESS.

By C. A. WALDO.

Concluded From March.

IN the intellectual progress of the seventeenth century new notions had permeated the mathematical world. The idea of the dependent and independent variable had gained such ground that the then new science, analytic geometry, was the necessary result. This new subject lent itself readily to the graphic representation of mathematical interdependence and thus furnished in mathematical form a generalized expression and representation for a thing changing in obedience to law. The rate of change necessarily followed soon after, and isolated cases of its use in determining the tangent to a curve show that it was in the air. Newton and Leibnitz immortalized themselves by noting the mathematical drift, seizing the new methods and constructing from them the new discipline.

Thus man came into possession of an instrument adapted to discover and establish the laws and processes of nature because it is constructed on nature's model. Trees do not increase instantly a foot in height and then rest for a period before the next jump. Rivers are not at one instant a swelling muddy flood and at the next a clear, tranquil stream. The Knickerbocker express does not go by jerks and instantaneous leaps from point to point as it passes over the space between Indianapolis and New York. But all things from external nature to the innermost soul of man, connect various times, seasons and conditions by continuous numbers. The tree, the animal grows, the flood abates, the train progresses, mind matures, life expands, love deepens and broadens.

> "Chance and change are busy ever,
> Man decays and ages move."

God alone changeth not. But everything we see, all else we can think of, is in a state of flux. The rate of these changes is matter of common observation and comment, and it is nothing but the first differential coefficient, Tait says every one uses the ideas of the calculus if he is not a fool. I doubt whether any of us, without we consciously give ourselves to reflection upon the subject, begin to see the clearness, the depth, the breadth, the comprehensiveness of Newton's philosophic vision when he gave to the world the words "fluent" and "fluxion" in connection with his new culture.

As calculus was the first master word spoken to the very soul of nature, so it has wrested from her first this secret, until man with this powerful ally is rapidly enslaving all her powers to work out his own will.

The calculus rewarded its discoverer by giving him the demonstration of the invisible chains binding the moon to the earth and then by delivering into his hand the secret of the system of the world. Who will estimate the services to civilization of these cosmical studies? Old superstitions disappeared forever. A man's horoscope became only a poetic fancy. Men no longer prayed to be delivered from the flesh, the devil and the comet. But our solar system was

reduced to order and beauty, while mathematical analysis reached out with her long, delicate quivering fingers and snatched from the depths of space a new planet—never seen by the unaided eye of man—to enrich the retinue of our sun, and to demonstrate the divinity of the human intellect.

This was the first great conquest of the calculus. But when it was turned upon things terrestrial, it exerted an influence less dazzling, perhaps, but no less profound. It laid the foundations, more, perhaps, than any other thing for our age of brilliant invention and startling discovery. Great generalizations have sprung from active imagination and patient accumulation of facts. But these usually have a far richer content than their first announcers dream of. The calculus analyzes these great thoughts, recombines them and produces results the most unexpected and important.

Much of our polite learning has been in the possession of the world for two thousand years or more; but the peculiarity of our present civilization is the general diffusion of knowledge, and the triumph of engineering skill. Invention and machinery have multiplied man-power by twenty. And below it all lies the calculus. The successful engineer who would be anything but a mere slavish copyist must have a mind well-founded in mathematics.

Let us refer briefly to some of the things which calculus has done or helped to do in engineering. We may say with little danger of contradiction that *the problem* confronting the engineer of today is a question of minimum causes and maximum effects—a question of the first differential coefficient.

It is equally beneath the dignity of the disciplined man to put too much or too little into a structure to serve its designed purpose in use and beauty.

In hydraulics calculus investigates water pressure on a submerged surface and center of pressure for the same, thus determining the size and form of retaining walls of all kinds and solving the first problem of a water supply. It also investigates the quantity of discharge through orifices, notches and overweirs; determines the most economical sections of conduits and canals, the time of emptying or filling locks or other vessels under a varying head, the maximum range of jets from a given inclination; determines empirical formulæ from experimental data by the aid of least squares; discusses non-uniform flow in rivers and back-water curves above dams; discusses the maximum work derived from moving vanes, such as, stationary water-wheels, wheels of steamboats, and screws of propellers.

Fifty years ago an excellent engineer by the name of Uriah Boyden spent weeks in designing the buckets of a water-wheel. He obtained correct forms, but by the aid of the calculus a man no more talented naturally may to-day do the same work in two or three hours.

In machinery and structures it investigates the work absorbed by friction of pivots and the like; moments of inertia and centers of gravity, leading to transverse strength of beams, their deflections, slopes and elastic curves; it establishes the strength of thick hollow cylinders and spheres upon which is based the design of fire-arms and ordinance; computes suspension bridges; determines stresses in arched ribs of iron, steel or timber, or in stone arches.

It gives the mathematical theory of maps, derives formulæ for computing geographical coordinates and for map projection; adjusts obser vations in triangulation and determines the probable error.

It analyses and improves the steam engine; it studies the effects of reciprocating parts, studies the balance-wheel, the shaft, rods, and cranks; it enters the steam-box and discusses steam pressure, horse power, and efficiency. It measures the contents of irregularly shaped vessels.

It has largely developed the dynamo, and has given us Fourier's series upon which the theory of this machine rests.

Klein once said to a former pupil of his: "You know that I have been too busy with theoretical matters to keep with the practical things; what is the greatest recent discovery in the application of electricity to the arts?" The pupil replied: "The greatest recent discovery in electrical engineering is a method by which a current may leave a long circuit at a higher potential than it entered it." This is the well known principal by which Niagara Falls, for example, becomes available many miles away from the fall itself, as a source of power. Klein said, "Wait!" "That," he presently exclaimed, "depends on the second differential coefficient."

Problems such as I have thus alluded to are the problems of civilization. Light, heat, power, architecture, water supply and distribution, dissemination of news, transportation,—did you ever think how closely these things affect us? Chemistry and mathematics have done their best in providing for our locomotive a rail that would resist the strain of a forty-ton car and an eighty-ton engine. The forty-ton car is the ship of the plains. Without it millions of acres now

dotted by happy homes would have been unavailable for settlement.

Up to this time but a small per cent. even of our educated people have been imbued with the spirit of the calculus and have appreciated its power. Indications point to a large expansion in the near future in the number of those who will cultivate it for the power that it will give.

A popular German treatise upon this subject has recently been written expressly for chemists.

The object of this treatise is easily deduced from a remark in it quoted from Jahn in his elements of electro-chemistry. He says: "Chemists must gradually accustom themselves to the thought that theoretical chemistry without the mastery of the elements of the higher analysis will remain for them a sealed book. For the chemist the differential or integral sign must cease to be a senseless hieroglyphic if he will avoid the danger of losing all comprehension of the theory of his subject, for it is fruitless labor to attempt to make clear in many weary pages what an equation says to the initiated in a single line."

By the higher analysis Guldberg and Waage have obtained formulæ for studying the course and end of a chemical reaction. Nor in the application of analysis to chemistry are mathematical difficulties seriously in the way. The inner nature of the physical or chemical process is represented as truly by the method and working of the higher analysis as an object is represented by its photograph.

The power of the analysis in nature lies largely in its ability to deduce instantly from one set of laws another set equally important which at first sight do not seem to be closely related. For example, knowing the law of motion in space we deduce velocity at any instant; knowing the chemical reaction as a whole we deduce its intensity at any moment; from the weight of air and the laws of gases we deduce its pressure at any height.

To the chemist we must look for the solution of many problems whether of theory or practice. Perhaps the greatest of these is the philosophic question of the ages—the nature of matter. If this question is ever definitely settled it will be by the chemist with the aid of the calculus.

The higher analysis in its services to mankind is not confined to the exact sciences.

Those who cultivate natural sciences, so-called, have been making and sifting vast accumulations of important facts with an enthusiasm, energy, patience and self-devotion which form an impressive illustration of the self-denial, the intelligent consecration of self to the race, the sublime purpose in life of the educated man of to-day. Where in history will you find finer examples of chivalric self-renunciation than are occurring among these men and women every day? Natural history has had its profound generalization. From the nature of the scientific laws of the origin of species and from their fancied bearing upon religion as well as science, every foot of ground has been bitterly contested. Even to-day Darwinism has many confident enemies. The controversy has reached that stage, however, where something akin to mathematical demonstration is needed if the theory would make further serious advance. To this last chapter Indiana is worthily making its contribution; but when an attempt is made to discuss observations and establish results upon higher ground, the calculus again comes into requsition. Indeed, so should it be, as the problem here presented is simply this: Can small accidental variation be integrated into specific differences?

Geology in its dynamical aspects, in its discussions of the earth's interior, and in questions of time necessary for the deposition of strata under varying conditions must sooner or later resort to the infinitesimal analysis.

To these will be added surface problems similar, perhaps, to the one suggested by a geologist. He asked that the calculus should be applied to determine the way in which varying temperatures apart from rain or frost may round off angular fragments of rock.

As political economy grows in certainty and increases in exactness it is found that it becomes a proper field for the higher analysis. Economists, in fact, who desire to get the full content from the material which they try to interpret and generalize, are coming to the calculus for an essential part of their equipment. In 1838 Augustin Carnot wrote upon the mathematical principles of the theory of wealth. Recently this has been translated in America and a Yale professor has published a little work on the calculus to unable those to understand it who are untrained in higher mathematics. In all products which may freely invite competition there are certain ascertainable relations among quantity, demand, price and profit. These are expressible in analytic form, can be operated upon by the methods of the higher analysis, and the result can be reduced to rational laws for the control of trade.

When the diversified interests of our country have been thus subjected for a period of years to statistical investigation and these results again have been formulated into equations of condition which in turn may be operated upon

by the prolific methods of the mathematician; when finally the laws thus deduced have been published, read and understood, we may hope that commerce may be something besides a shrewd guess, and that its shores will not be strewed with wrecks of the hopes of ninety-five per cent. of those who embark upon its uncertain tides.

To what is our analysis leading us? Who can tell? It is certainly gradually arming us with powers comparable to those of the fabled Martians of recent Cosmopolitan fame.

Who will set the limits to our advance? As our knowledge becomes more exact, the application of our analysis will widen till it embraces man and nature in all their essence and relations.

PURDUE UNIVERSITY.

ALCOHOLIC BEVERAGES.

By J. T. SCOVELL.

SCIENTIFIC STUDY OF THE PROBLEM.

In 1893 a company of fifty conservative temperance men realizing the importance of the temperance question, associated themselves together for the purpose of studying "The liquor problem in the United States." They are known as "The Committee of Fifty." The officers are Seth Low, L. L. D., President; Charles Dudley Warner, Vice President; Francis Peabody, D. D. Secretary; William E. Dodge, Treasurer, with Dr. J. S. Billings, President Charles W. Eliot, L. L. D., Colonel Jacob L. Green and Hon. Carroll D. Wright as an executive board.

The sub-committee dealing with the physiological aspects of the question have made no report, but some of their investigators have made preliminary statements which give some idea of the nature of the work they have undertaken to do. Professor W. O. Atwater, after a series of careful experiments, concludes that alcohol, used temperately, is a food and not a poison. It is difficult to see how this conclusion, if in accordance with fact, could injure the cause of temperance. But the radical wing of the temperance community are startled; they see in it a menace to their corner-stone and battle cry. That "alcohol in any form or quantity is a poison" has been the basis of all their work, of all their assertion and invective. Professor Atwater's assertion and apparent proof that alcohol may be food and not a poison, falls like a bomb in their camp, stirring it up from center to circumference.

Instead of meeting the conclusion of Professor Atwater by instituting investigation and experiment for the purpose of testing the correctness of his finding, they reiterate assertions, restate opinions, resort to invective, but introduce no scrap of rebutting evidence. Such measures may obscure the question but can do nothing toward settling the controversy.

Dr. Ferdinand Hueppe professor of hygiene in the University of Prague, says, "Capable physicians recognize that the action of small doses differs from that of large doses of the same drug. Opium, for instance soothes in large doses and stimulates in small." "The fundamental biological law, first expressed by Arndt, H. Schultz, and Hueppe, to which there is no exception, is, every substance which can paralyze or kill any cell or cell protoplasm, can also act in small quantities as a stimulus to cell activity." This law seems to confirm the conclusions of Prof. Atwater.

The sub-committee on the economical aspects of the problem selected Mr. John Koren of Boston as their special agent. His report, published in 1899, treats of the liquor problem in its relations to poverty and crime, to the Negro and to the North American Indian. It also considers the social aspects of the saloon in several of the large cities of the United States. This report covers a larger variety of cases, a greater area of territory and a greater number of nationalities than any other report ever made. In a summary of the report the committee say "Of the poverty which comes under the view of the charity organization societies, about twenty-five per cent. can be traced directly or indirectly to the use of liquor. Of the poverty found in alms houses thirty-seven per cent. could be traced to the use of liquor." "In the case of the destitution of children no less than forty-five per cent. was found to be due to the liquor habits either of parents, guardians or others."

In regard to crime due to the use of liquor the investigation covered 13,402 convicts in seventeen prisons and reformatories scattered

throughout twelve different states. "Of this number it appeared that intemperance figured as one of the causes of crime in nearly fifty per cent. It was however first cause in only thirty-one per cent. and sole cause in only sixteen per cent. of the number." These statistics differ considerably from statistics and estimates formerly made. "It was claimed by De Gerando who wrote in 1839 that seventy-five per cent. of the pauper cases in the United States were caused by drink, while Charles Loring Brace says that two-thirds of the crime of every city is due to drink." "Mr. Boies says that alcohol is the direct or indirect cause of seventy-five per cent. of all crimes and fifty per cent. of all the suffering endured on account of poverty. Other figures from our country fall short of the above, varying in charity cases from four and nine-tenths per cent. up to twenty-one and nine-tenths per cent. It is claimed that in Germany in only two per cent. of the cases could the pauperism be attributed to the abuse of liquor." The results reached by the committee compare well with those by the Massachusetts Bureau of Labor Statistics which show "that in Massachusetts about thirty-nine per cent. of the paupers in almhouses had been brought to their condition by the personal use of liquor." Many other interesting facts were reported, the careful study of which will aid in understanding the liquor problem. The figures given show that the intemperate use of alcoholic beverages is one of the causes of poverty and crime. It is not the only cause, and is seldom the cause in a majority of the cases. "The study which Mr. Charles Booth made of the condition of the population of the east end of London led him to the belief that a large percentage of pauperism was due to old age and sickness and a small percentage to vice or bad habits." The sub-committee on the legislative aspects of the question engaged Dr. Frederick H. Wines of Springfield, Ill., and Mr. John Koren to investigate the working of liquor legislation in several different states. They studied prohibition in Maine and Iowa, the dispensary system in South Carolina, the restrictive system in Massachusetts, the local option law in Missouri, the liquor laws of Indiana and Pennsylvania, and the Ohio liquor tax law. They were not able to find out how much liquor was consumed, nor how many arrests were made for drunkenness, or for drunkenness and disorderly conduct. "Indeed, one of the results of their investigations is that statistics on these subjects are utterly unreliable. The difficulties they encountered in these investigations were great. The effects of intemperance in promoting vice and crime are often mixed with the effects of many other causes; such as, unhealthy occupations, bad lodgings, poor food, and inherited disabilities; and it is difficult to disentangle intemperance as a cause from other causes of vice, crime and pauperism."

DEFEAT OF PROHIBITION.

"At every point one encounters intense partisanship, which blinds the eyes of witnesses and obscures the judgment of writers and speakers on the subject. The experience of these investigators gives warning against the easy acceptance of partial or partisan statements on the liquor question. They found, that prohibition had abolished the manufacture of liquors in some districts, and in districts where public sentiment was strongly in its favor had made it hard to obtain intoxicants thereby removing temptation from the young and others. "But prohibition has failed to exclude intoxicants completely even from districts where the sentiment has been favorable." The efforts to enforce prohibitory laws during the last forty years has given rise to many unlooked for results. "The public has seen law defied, courts ineffective through delays, perjuries and other miscarriages of justice, officers of the law double-faced and mercenary, legislators timid and insincere and office holders unfaithful to pledges." The liquor traffic pays fines and bribes, corrupts the courts and the police. The sight of justices, constables, and informers enforcing a prohibitory law far enough to get the fines and fees, but not far enough to extinguish the traffic and so cut off their profits is demoralyzing to society at large." In regard to prohibition in Iowa the committee say, "The prohibition experiment has probably never had a fairer test, nor a test under more favorable circumstances than in Iowa. Public sentiment is and has been from an early day strongly opposed to intemperance. The cause had the advantage of an alliance with the political party in power, and for years was the dominant faction in that party. It held this vantage ground for ten years, a period long enough to demonstrate the wisdom or folly of the attempt to restrain an animal appetite by law. The end was defeat." And yet the law "wiped out nearly a hundred and fifty breweries, closed a large distillery, and drove out of business nearly two thousand saloons," The moral degradation attending attempts to evade the law was not confined to the lawbreakers, but included many of those who were striving to enforce the law. The sanctity of private life was violated, searchers, tasters

and informers were employed and encouraged and blackmail was common. In general, "Whether prohibition has reduced the consumption of intoxicants and diminished drunkenness is a matter of opinion and opinions differ. No demonstration on either of these points has been reached or is now attainable after more than forty years of observation and experience."

LICENSE, LOCAL OPTION AND THE DISPENSARY.

The license system seems to work well in many cases, reducing the number of saloons and lessening drunkenness and disorder. Local option laws in general are more easily enforced and are more effective. But the committee say "the statistics of arrests do not support the common assumption that Massachusetts has become more sober since the adoption of the local option law. The dispensary system of South Carolina does promote sobriety, lessen the sales of liquor and greatly reduce drunkenness and disorderly conduct. As enforced in South Carolina the dispensary law seems more effective in promoting temperance and is attended with fewer degrading influences than any other ever enacted. Political opponents often deny that any good has been accomplished, and the prohibitionists will frequently deny that drunkenness has been reduced."

Liquor laws commonly are more exacting than the general public demands, hence in some places they are effective, but in most places they are evaded with degrading effects. But it would be a mistake to assert that the law accomplishes nothing. "It restricts the multiplication of saloons; it ensures a certain degree of responsibility on all engaged in the traffic, and puts the business under police control and helps in the preservation of order." But no liquor law has yet been enacted that has seriously reduced intemperance among the people of the state or nation.

The history of the temperance movement also shows that legal enactments have done little, while temperance societies and other educational influences have done much toward promoting temperance.

"In 1760 the religious societies in New England began to protest against the use of liquors at funerals."

"The first modern temperance society was formed in 1789 by 200 farmers of Litchfield, Conn., who determined not to use any distilled liquors in doing their farm work." About this time the churches began to take action against intemperance. In 1813 a committee from the Presbyterian churches organized the "Massachusetts society for the suppression of intemperance." Many other societies were formed but up to 1836 the members pledged themselves to abstain from distilled liquors only. About 1836 the Total Abstinence movement began.

TOTAL ABSTINENCE MOVEMENT.

The Washingtonian Temperance Society, formed in 1840; the Independent Order of Good Templars, formed in 1852. And many other societies, formed at different times did much to reduce the use of alcoholic liquors. "The Total Abstinence Society formed by Father Matthew, in Ireland, in 1838, contained in 1840, 1,800,000 members. As a result the consumption of whisky in Ireland was reduced from 12,500,000 gallons in 1828 to 6,500,000 gallons in 1841." Progress in education and culture, the moral suasion of churches, temperance societies and certain natural restraints have greatly lessened the use of alcoholic beverages, and have promoted the cause of temperance. As early as 1639 laws were made in Massachusetts and Connecticut to restrain intemperate drinking. Various restrictive laws were enacted in the different states from time to time, but they were not satisfactory, and in the agitation over these laws a sentiment in favor of prohibition was developed. In March, 1847, the Supreme Court of the United States unanimously decided that prohibitory laws "were not inconsistent with the Constitution of the United States, nor with any acts of Congress." Maine, in 1846, enacted the first prohibitory law. The famous "Maine-Law" was enacted in 1851. Many other states followed from time to time, but none have been conspicuously successful and most of them have been repealed.

The saloon was established for the purpose of dispensing alcoholic liquors—established in response to a demand. The saloon is often a center of vice and crime; in general, it tends toward intemperance and is to be deplored. But while the demand exists the saloon will exist. In many cases, perhaps in a majority of cases the saloon is a social center. It is always open, it is cool in summer, warm in winter, light and cheerful at night. It is a news center and an intelligence office, and often a lunch room. Generally the saloon is equipped with a lavatory and toilet room. Here a man may meet his friends in a social way and enjoy all these opportunities for hours on the payment of 5 cents for tobacco, cigars, or liquors. Can we wonder that the saloon has a large clientage in the cities and large towns!

Laws have failed to do much for the cause of

temperance; in general the laws have been more stringent than public sentiment demanded. But education, through temperance societies, through the churches and schools, and through many natural agencies has done much toward lessening the demand for alcoholic liquors, and has been effective in promoting temperance. Why not teach temperance in thought, word and actions, temperance in work and in recreation, temperance in eating and in drinking. Let us teach temperance temperately, without exaggeration, never juggling with the truth.

Intemperance is often a cause of suffering, poverty and crime, but these evils are also efficient causes of intemperance, and any successful scheme for promoting temperance must include such moral, social and economical reforms as will reduce suffering, poverty and crime to a minimum.

Temperance people must lay aside petty differences and jealousies, must abstain from bitterness and strife, must stand together as a unit against injustice and intemperance of every kind if they would succeed. Do not hurry, do not be discouraged, the mills of the gods grind slowly.

The saloon will remain as long as the demand for liquor exists. If law seems necessary to regulate the traffic, let it be well within the public demand, and such that the officers can enforce without outside pressure. The social feat ure of the saloon is a menace. Many temperance workers in the larger cities think that a large per cent. of saloon patronage might be diverted by establishing other social institutions that are free from the objectionable features of the average saloon. Such substitution has been productive of good results in many cases, and seems worthy of wider application.

SCIENCE IN THE DISTRICT SCHOOLS.

By JOHN P. HOCHHALTER.

TO give a complete discussion of science and science teaching in the school one should take up the various lines of study and analyze them to see what special part they play in the development of an all-rounded individual, and then from the analysis of the educative value of science could be seen just what its special function is. It is seen now more clearly than ever before how it fits into the complex educative factors to make them all the most useful tools in the teacher's hands. This subject helps the language, the drawing, the reading, the geography; it helps all the subjects, as the square in the hands of the carpenter helps the saw and plane, or as the plumb-line assists the mason's trowel. As the mechanic's tools are used directly and also indirectly to accomplish an end so are the tools of the teacher. Literature at times is the clamp, the vise to hold the mind while mathematics and science square, plane and round off the rough places. Then mathematics and science are the indirect influences used when literature, music and art make noble, pure and good. It is not the purpose to discuss the values of these subjects: that would take all the time of this paper and the present topic would not receive its due,

But why study science? Why should the boys and girls of the lower grades work with the grasshopper, the cricket, the spring beauty, the rainfall, or the oxygen that sustains his being? Why should the country teacher be asked to add this work to her tasks which are now almost innumerable? I shall merely outline the answers to these questions by others and some suggestions.

What study exercises more closely and completely the powers of observation? When real scientific work is done the most accurate looking into things is necessary. The casual glance, the dreamy indifference, sometimes displayed by pupils can accomplish nothing either for the pupil's growth or knowledge of the subject in hand. If he is to grow the pupil must see the thing as it is. Then only will plants or insects with their characteristics, or the physical or chemical experiment amount to anything as an educative factor. The value of the information is sometimes very small compared to the value in mental power acquired in getting the knowledge. For example, for the pupil to know that the antennæ of the ground beetle are divided into several segments and these grouped into three main divisions, while those of the grasshopper are in one main division is of little value in after life; but require him to study each to find out the likenesses and differences, and draw them to prove what they have discovered, and then discuss the facts obtained, is productive of power to him such that a thousand facts crammed into him cannot equal. Or the knowledge that the wake-robin has three petals and three sepals and

an ovary divided into three parts, with ovules in each, is of little value compared with powers of observation cultivated in gaining the knowledge direct from the plant. Accurate observations must be insisted upon, accurate statements must be made, and truthful drawings must be required. Sometimes pupils try to put their personal element into their drawings and consequently misrepresent the object or exaggerate some characteristic. There are those, too, who think they can't draw, but if kept at it and if they see the object as it is and have a clear mental picture, the pencil will soon learn to express it. Their drawings then will give information to one looking at them. Whenever a pupil by slow, hard work has found the characteristics of one object —say a grasshopper, it is a pleasure to see how eagerly he grapples with the new forms that come to his attention. Now, were it information alone we wanted, how easily we might get most of these facts from some book.

Again, what study can give the pupil such power of discrimination? The likenesses and differences in the characteristics of the plant world are thrust upon the pupil for selection, arrangement and deducing conclusions. What can test his ability or power more than taking a plant, finding its general attributes, selecting its special characteristics and finally putting it into a group of plants with common characteristics? To place a plant or animal in such a group among its relatives requires most studious and accurate judgment. In this process he learns better than any place else to discern the essential from the non-essential. What a valuable lesson for a pupil to learn!

Again, what study furnishes better facility for the expression of thought than that obtained from observations, generalizations, and deductions made while studying some plant or animal? We hear every day the old story of pupils not being able to express themselves—"I know but I can't tell," they say. Here is the opportunity of science. If we see to it that every idea obtained is expressed, it will not be long until this will not be the hardest thing for the pupil to do.

It cannot be too often repeated or too strongly insisted upon, that the pupils express accurately and explicitly what they have seen and done. That pupil has gained most power who has truthfully expressed what he has accurately seen. A pupil knows most thoroughly the truth that he can express best.

Then that other form of expression, drawing, has an opportunity of receiving the attention it so much needs. It is worth while to insist again on plain, unconventional drawings. Those that express truly and faithfully the subject or experiment in hand. It is in this way that the country teacher can do much towards introducing drawing into her school work. It can perform a two-fold purpose and thus take less time than one would suppose. I wish to suggest, too, that drawing is one of the most neglected subjects in the country school. The country pupils cannot draw, and many times their timidity is embarrassing when they are asked to put a drawing on the board to be used for class work. This is accounted for from the fact that they are not required to draw in the home school. The country student should draw for the same reason that the city boy or girl does. It should be a part of the program of the country school for the same reason that it is a part of the program of the city school. Science work, then, will aid materially this most neglected and useful subject.

As intimated before, true science is being used more now than ever before. Teachers and school officers are awakening more and more to its true value. In my brief experience as a teacher I have seen great progress in the common schools from comparatively no science, to some nature study and in many places to the very best of scientific work. It is true that in some of our schools nothing of a scientific nature is attempted even now. Can you remember when you were in the common school how you yearned to know the wild flowers, the birds, the insects? Have you ever been criticised for expressing a thought in some drawing, so severely indeed that this mode of expression left you forever?

A few years ago those in control of the Reading Circle placed *Steele's Zoology* in the course. Their aim was to push this subject upon the teachers to help them in bringing it into their schools. We all read the book and discussed it in open institute. We were making an excellent record until some one suggested that we had better get some of the animals themselves and study them as they should be. A horror swept over the assembly! The idea of bringing bugs, toads, snakes, to such a place? Perhaps here is where many of us fail in our science work. We are afraid of bugs. We will not touch a frog. A snake—well, it is an abomination. We are squeamish about anything that pertains to the lower animals and how can our pupils be otherwise? If we manifest a horror when a grasshopper jumps across our path, we must expect our pupils to do the same thing. If we will not touch an earthworm, can we expect them to do so? This was the condition of that crowd of

teachers and the study of *Steele's Zoology* was a failure that year. The following year they had botany in the course, which received a similar treatment. I remember that same crowd had a debate as to whether carbon dioxide was heavier than air. The teacher in charge had not thought of trying the experiment. All this was ten years ago and in another part of the state, but it shows one stage in the evolution of science in the country schools.

In meeting and associating with a number of the township high school teachers of the state I find that almost every one is doing something in a scientific way. There is an effort made to have fewer scientific branches taught and have them really scientific. This is commendable. On questioning many of them, I find that it is the opinion that it is impracticable to teach zoology and botany because of the lack of laboratory facilities. Yet they hang on to physics with a grip that can hardly be broken. I am sure that almost every township high school in the state is more fitted for botany and zoology than for physics. To equip a physical laboratory requires an outlay of money which most trustees cannot afford, while to do good scientific work in botany and zoology doesn't of necessity mean any large outlay. I shall merely mention what has been done. For several years our students of biology made their forceps from galvanized iron; for a scalpel they used their pocket knives. Their microscope was a twenty-five-cent linen tester, and a pair of embroidery scissors served as dissecting scissors. But now we have them purchase a dissecting set which gives better satisfaction. I had one class a whole year in the grades that had only a dissecting needle, made by pushing a darning needle into a short round stick of soft wood, and a linen tester. Some get the idea that the only way to do scientific work in zoology or botany is to have a compound microscope. It is desirable to have one, or a dozen, but all the work a country school or even a township high school would want to do could be done without it. We are not necessarily doing scientific work when we are looking through a microscope. Neither is minute anatomy the only kind of scientific work that can be done. On the other hand some of the very best work can be done without the microscope, as has been demonstrated over and over again. What we want most is a pair of good eyes and a desire to use them. To get them they must be developed by exercise. We must expect them to develop.

I would suggest then that we inform ourselves more thoroughly in the biological and physical sciences and begin at once to change the monotony of the school, and introduce from day to day living lessons—ones that will call forth activities that only science work can.

You have already guessed that my suggestion is to use the laboratory method. Make the schoolroom the laboratory. Bring in from the fields and woods flowers, plants, insects, whatever of life they may furnish. Then, let nature be the laboratory. Take the pupils to the fields, the valleys, the woods. How much life can be instilled into the children's minds by studying the things of nature where she has produced them. Make excursions, look into things, find out nature's secrets. An hour spent on a thoughtful, carefully planned excursion is worth several hours of text-book lessons. How much geography will mean to a boy when he goes to the hill, the stream, the city with a definite purpose of studying them.

You will say "there is no time for all this—I am overworked now—It is impossible to think of it." Could you not substitute a science lesson for a language lesson once in a while? Could not the thought obtained from studying a grasshopper, a bird, a dandelion be used at the next language lesson? Then could not this lesson, properly worked out be used as a writing lesson?

I do not mean to make science the all important thing and the others subordinate. I do mean though that the country teacher has an opportunity that the city teacher does not have. Every natural facility is at hand if only it would be used. Think of a country boy, spending his young life among the trees and not knowing them, among the birds and flowers and not having his attention fixed upon them, among the hills, streams, springs, and plains and not dreaming of the tremendous forces that have produced them!

And then in conclusion, there is a world of science that can be done in the physiology class. These classes are usually small. Why could not each student have a specimen constantly at hand to illustrate everything he studies? Why must he be fed on dry bones? Why learn meaningless terms by the score when the body furnishes discussions of adaptations, perfections, beauties not equaled anywhere. It is useful to have names, it is invaluable, but as a means and not as an end.

The butcher will furnish many a valuable specimen for the asking. The least disagreeable specimen is the frog. It is wieldy, plentiful, easily preserved, and furnishes illustrations for most physiological facts. Then there are many physical and chemical experiments we can per-

form that will make the functions of the parts of the body real. Any amount of apparatus can be devised by teachers and pupils. Give the boys and girls the right sort of encouragement and many pieces of apparatus will be found at home and brought to school. When in the grades and country school, I have been overwhelmed with material, and that spirit is still abroad.

ATTICA, IND.

THE RELATION BETWEEN GEOGRAPHY AND LITERATURE.

By ANNA LEMIRA BROWN.

WHILE the close connection which exists between history and literature has long been realized the still closer relationship between geography and literature has been ignored almost entirely.

In one sense the connection between history and literature is more obvious than that between geography and literature; and yet, the geographical element in literature is re-inforced for the reason that geographical precede historical facts, and, to a much greater extent than is recognized ordinarily, hold a causal relation to them. Then, too, history is concerned with litterature only when the localities or characters dealt with are drawn with reference to their actual history, while geographical elements underlie nearly every literary production and many which will never be included within the term "literature."

The terms "geography" and "geographical" as used in this paper will have a somewhat broader significance than is sometimes given them. Until recently, by geography was meant the mere superficial descriptions of the earth's surface—or parts of it—its appearance, productions, cities, races, and the boundaries, both natural and artificial, of its political divisions and sub-divisions, and the location of its objects of chief interest; such as, cities, rivers, oceans, or mountain chains.

To Professor Arnold Guyot, more than to any other scientist, is due the recognition of the deeper, and broader significance of geography and geographical study which characterizes the present methods of geographical study. He led scientists to regard the physiographical conditions of the earth as determining elements in the development of the characteristic racial distinctions; from that proposition it was a natural and logical conclusion to decide that political divisions of the earth's surface were as much dependent upon physiographic conditions as were the so-called natural divisions, although the results were not so quickly apparent.

That Switzerland so early became a republic and retained its government in a continent devoted to monarchies was foreshadowed by Cæsar, who, two thousand years ago, after describing the people of Helvetia and its situation, wrote: "His rebus fiebat, ut et minus late vagarentur, et minus facile finitimis bellum inferre possent; qua ex parte homines bellandi cupidi magno dolore adficiebantur." For it follows that if the Helvetians found it difficult to wage war upon their neighbors, their neighbors found a return of the bellicose compliments equally difficult. The Scottish Highlands, China, Thibet, and certain African localities owed their long immunity from conquest to unconquerable physiographic conditions. Again, the development of a country depends upon its wealth in natural resources —agricultural and mineral, and its facilities for commerce, foreign or domestic. The military development of a country must necessarily depend upon its fitness for supporting a large body of armed men, upon the possibility of speedily mobilizing large bodies of troops, and upon its possession of harbors for fleets. When one reads of the wintering of Sir Francis Drake on the California coast in the year 1580 one cannot but wonder what would have been the effect upon American history, and, incidentally, upon American literature had he known of the mineral wealth,—to say nothing of the agricultural possibilities, buried beyond the low Coast Range. It is safe to say that two reasons which prevented English exploration of the California coast at that date, when England and Spain contended for the naval supremacy of the world, was the absence of suitable harbors, and, probably, the forbidding and barren aspect of the Coast Range. Suppose the wonders of the Klondike gold fields had excited the world thirty years earlier than they did! Imagine that the Rocky Mountain chain could be so swung as to lie at right angles to its position; imagine the transposition of Behring's and Davis' straits; imagine that the Mississippi takes its rise upon the northern slope of the "Height of Land"; imagine a thousand transformations

of physiographic conditions over the earth, and then attempt to fit history and literature as they now stand to those changed conditions, if necessary, to prove the existence of an underlying geographical foundation.

We do not expect the inhabitants of an island to show the same characteristics and mode of development that are found in the people of an inland, mountainous country. The natives of the American continents showed very plainly the effects of geographical and climatic conditions in their modes of life. Compare the Digger with the Aztec tribes, the Sioux with the Kootenai.

Mr. Hugh Robert Mill in *The Realm of Nature* says: "The way in which igneous rocks occur, whether poured out as lava on the surface or forced as intrusive sheets between beds of other rocks, greatly influences the part they take in determining the scenery of a country."

It seems impossible that the average reader of general literature, who does not give special thought to the matter, realizes how much the skillful author depends upon scenery to emphasize his delineations of incident or character. This is especially true in poetry; witness, Longfellow's voluminous compilation published under the title of "Poems of Places."

Entirely omitting works of a serious or popular scientific nature many works might be enumerated which would be valuable to the teacher in the emphasis of physiographic conditions. Personally, I recall that Russia was made much more vivid to me by witnessing the production of a dramatization of Jules Verne's political novel, *Michael Strogoff, the Courier of the Czar*. While the performance of such a play by a superior company upon a well-appointed stage is more impressive than the mere reading of a book the value of both is traceable to the same principle. Although I was a teacher of many years' experience before reading the book, the descriptions of Iceland,—its ancient customs, the horrors of its penal colony working in the sulphur mines and the inevitable influence of the privations of life in an isolated region upon life in its broadest sense, as shown by Mr. Hall Caine in *The Bondman* made Iceland more real to me than years of enclyopædic study could have done. The formal study of such conditions lacks the interest bestowed by the personality of strong fictional characters. A similar impression is made by Mrs. Barr's *Jan Vedder's Wife* and her *Prisoners of Conscience*.

To the mysteries of an unread nature we owe the beautiful myths which were the beginning of literature—the world over. That nature should assume diverse forms and suggest diverse meanings to the peoples of different localities is our gain, from a literary point of view. The Grecian and the Norse myths are exemplifications of this gain. Ancient religions were for the most part outgrowths of an imperfect conception of nature. While there is a vast difference in the presentation of the religious ideas of the Persians and the Druids, their original basis was identical, but modified by physiographic, climatic, and racial conditions. Rev. James Freeman Clark in *Ten Great Religions* traces the place of nature in the epoch-making religions of the world in a very strong, convincing manner.

To return to literature:—who that has read Victor Hugo's *Les Miserables* did not pause after the description of the battle of Waterloo and consider the part played by the sunken road of Ohain in the development of nineteenth century civilization. The conqueror of all Europe finally lost his freedom, and made St. Helena famous, because of an unknown—ditch!

The library method of studying history is becoming justly popular among the better class of teachers. It will be a great advance in the correlation of the different studies when library methods of studying geography are introduced. Such work presupposes access to a good library, a deeply-read corps of teachers and the spending of more time and money in preparation than most teachers under present conditions can afford to spend.

A class of children whose average age is thirteen have been very much interested recently in their geography. When volcanoes were the subject of study the description of the eruption of Vesuvius as given by Bulwer Lytton in *The Last Days of Pompeii* was provided for them; other extracts from literature were presented, and pictures of noted volcanoes were shown to them. These pupils were introduced to Washington Irving while studying the Hudson River, and geography is to them a very vital thing. It is not half so important for pupils to know the exact population of New York and London as to know *why* large populations must center at those places.

Some of these children have older brothers and sisters whose study of geography consisted in bounding countries and states, learning their capitals and chief cities and giving formal descriptions of rivers, mountain chains, and other natural features after the antiquated map-question lack of method. The comparisons drawn by the children are as suggestive as they are amusing.

MADISON, WIS.

MUSIC.

EDITED BY

J. G. CRABBE, Ashland, Ky.

INFLUENCE OF MUSIC AND ART IN NATIONAL LIFE.

In a brief glance at national history we may see the effect on national character and achievement of an education founded upon music. Just beside this nation we may see another that had no music in its system of education, and actively opposed the pursuit of music by its citizens.

These two nationalities struggled for supremacy in Greece through the centuries. Sparta excelled in producing fighting men, but dreaded with superstitious fear the supposed enervating influences of literature, poetry, art and music. It even feared the influence of a mother's love, and the state took the future warrior from his mother's arms almost in babyhood and trained him in brutality even as Rome trained her gladiators.

Athens remains to-day the great fountain of art, poetry, sculpture, and music, and history tells us that music was part of all the poetry, literature, and such sciences as were then known. They sang and chanted all the lessons in these departments. The great Aristotle advocated and perfected this system. You know the record.

Sparta! What is her record? Her brute force died with the stalwart bodies of her sons, and she left no record in literature, art poetry, or music. Two paragraphs from the encyclopedia sum up the end of Spartan influence. "The site of the city has not been thoroughly investigated, and it is a question whether much remains worth bringing to life." The second is: "She sank finally, we know not how, under the degrading dominion of a sort of robber chief, Nabis, who fastened his dominion upon her by the support of emancipated slaves and mercenaries of the lowest class. Her best citizens were put to death or banished, and she was debased into a refuge of pirates and robbers."

NEED FOR COMPETENT TEACHERS IN MUSIC.

The chief difficulty with the plans of music teaching as they exist to-day is that they have been prepared especially to meet the incapacity of incompetent teachers. Such treatment of music lowers the plane of music teaching. An incompetent teacher and an incompetent plan—what a combination! By what principle of pedagogy, modern or otherwise, can such an alliance be justified? Most certainly do the teachers of our schools need help, but they never can be benefited by robbing music of its charm and inspiration, by treating it in a so-called practical way. This practical treatment is impractical in the highest sense of the word, for no teacher can teach a subject in the proper spirit when the real spirit and life of that subject has been taken out of it by the plan of grading and arrangement. Therefore, a plan of music for the child, and for the teacher as well, should be more than a logical development of the science of music; it should be psychological in its adaptation to the development of the child, appealing in the highest degree to every quality of mind and heart, and this can be accomplished only by the teacher who is thoroughly imbued with her subject, who appreciates the possibilities of music for the child, and who works for the development of these possibilities. The teacher who does not possess qualities that fit her to teach music properly will find much inspiration in a plan of work that is based on the true idea of musical development. Music in the soul must precede music on the lips; heart and mind must work in accord, then a knowledge of tune and time will follow and the hour devoted to singing will be one of inspiration, enthusiasm, interest and benefit for both pupil and teacher.

—*P. C. Hayden at N. E. A.*

THE TOUCH OF ART.

Sometimes the day is dark, and all goes wrong,
And clouds hang dull and heavy o'er the land,
While lonesome longings lie about the heart.
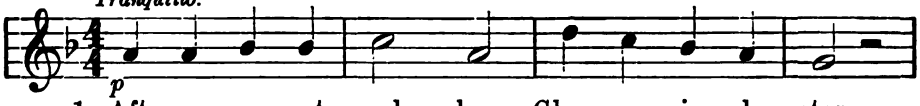
Then, by and by, they shape themselves to song;
And chords, awakened by the master hand,
Soothe other souls to peace—and this is art.

—*Albert Bigelow Paine.*

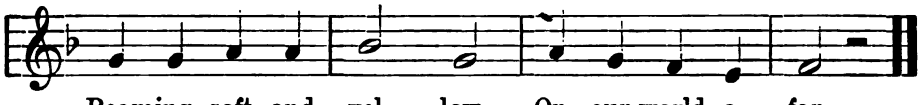
The Evening Star.

Tr. from the German by E. S. F. A. L. Jacob.

Tranquillo.
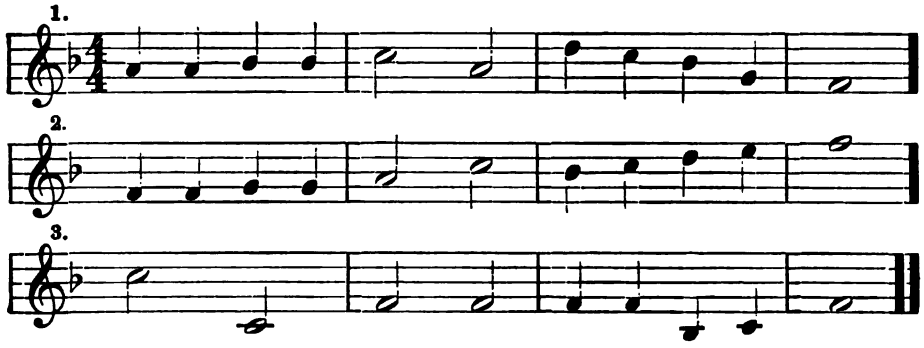


1. Aft - er sun - set mel - low Glows a sin - gle star,
2. Kind-ly light 'tis throw - ing O - ver earth and sea,
3. Here in fra-grant bow - ers Ten - der light it sheds,
4. Star, so soft - ly glow - ing In sweet ra-diance mild,
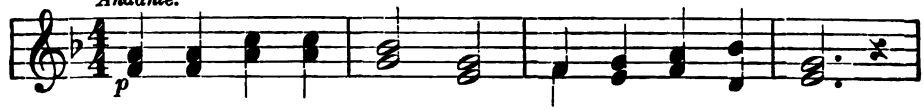


Beaming soft and yel - low On our world a - far.
Show-ing tar - dy bird - lings Where their nests may be.
Kiss - ing sleep - y flow - ers In the gar - den beds.
Would thy beams were show - ing Ne'er a home-less child!

A Round.

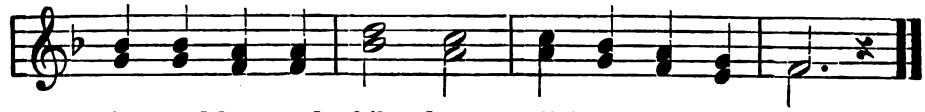


From the German. **Now the Sun is Sinking.** Ernst Anschuetz.

Andante.



1. Now the sun is sink - ing In the gold - en west;
2. And the mer - ry stream - let, As it runs a - long,
3. Cow-slip, dai - sy, vio - let In their lit - tle beds



Birds and bees and chil - dren, All have gone to rest.
With a voice of sweet - ness Sings its ev-'ning song.
All a-mong the grass - es Hide their wea - ry heads.

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PRIMARY.

EDITED BY

FLORA J. COOKE, Chicago.

TREE STUDY.

An outline of some work on trees is given below, noting the special points of observation for various months. On account of space it is necessary to present the plan in a condensed form, but it is hoped that the explanatory remarks will render the work intelligible to the reader, and indicate, in some degree, its motive, scope and possibilities.

I. SELECTION OF TREES.

In choosing their trees for observation the children were limited, for class work, to the selection of those upon the school ground or in the immediate vicinity of the school, as frequent *visits* to the trees were absolutely necessary and fundamental in the work. However, the interest of individual children in the trees about their homes or in places visited by them was always recognized and encouraged, and the data gathered by them outside of school were used whenever possible for comparison in making their class observations.

The children's reasons for choice of trees were usually very simple, for example: "I choose the pine because it's the Christmas tree!" "I choose the birch because it's the prettiest tree!" "I choose the elm because it's the tallest tree!" The oak was often selected for its shade or acorns, the willow for its catkin, etc. As the children were always spontaneous and unhampered in their choices we could judge what appealed most strongly to them. The following plan has been revised many times upon the basis of natural interest, until now no attempt is made in it to force the children into close analysis of the parts and processes of the trees and leaves, but it suggests that the children be allowed, under favorable conditions, to observe and compare the general habits and uses of several varieties of our common trees.

II. NOTES ON READING.

The results of the children's observations were used for blackboard and printed reading lessons. As each month brought a change in the trees and new questions concerning them, there was a constant increase in their written and printed vocabulary, and as they looked again and again at the same trees, continued repetition of words was necessary for expressing what they saw. Each reading lesson had a *distinct purpose*. It not only summed up the observations of the class so that the children could hold them clearly in mind but each one contained the data for some new inferences; for instance in the following lessons:

The trees need water.
The trees need soil.
The trees need heat.
The trees need light.

They give shade.
They give fruit.
They give wood.
They give pleasure.
They can give back heat, light and soil.
You may tell how.

All the facts were in the experience of the children, yet the mere summing of their knowledge and seeing it in a new relation gave them a feeling of power and exerted a strong influence for further investigation.

III. CONSTRUCTION AND COLOR WORK.

Once or twice in each month the children recorded, in painting*, their ideas of the appearance of the landscapes, trees, birds, fruits, etc.

By the end of September they felt the desire to preserve their work. They bound it into book form and then by measuring, determined the size of a cover and made it of manilla paper.

At the end of the next month, the October conditions were represented and bound in the same manner. *Decorative Design* began when the children painted upon the covers something typical of the month;—i. e., they were given seeds, stems, leaves, etc., and they arranged their patterns upon their desks and then represented them in color upon their book-covers. At the end of the year the ten books were bound into one large book. The cover of this book was made of cardboard covered with leatherette.

IV. NUMBER.

Accuracy and skill in measuring in whole numbers and fractions were acquired in making the books, seed envelopes, boxes for wood, and in the experiments which the work necessitated.

V. LITERATURE.

The selection of stories, songs and poems of course depended in part upon the experience and environment of the particular class of chil-

*Colored crayon can be used for this purpose.

dren. But such stories as Lowell's *Rhoecus*, Wiltse's *The Walnut Tree That Wanted to Bear Tulips;* the myths of Daphne, Philemon and Banus, *The Poplar Tree and the Secret of Fire;* the stories of historical trees; songs such as *The Tree in Winter*, by Eleanor Smith, and poems like Susan Coolidge's *How the Leaves Came Down* have always been invaluable in this work.

SUGGESTIVE PLAN OF WORK ON TREES.

Details for each month.

September.—Selection of trees for study. Painting appearance—green leaves, etc. Summing up of the children's observations and experiences into reading lessons. Special points for observation during this month :—what the trees need—what the trees give,—classification of fruits—colors in ripe and unripe fruits, *seeds* in ripe and unripe fruits. The inference from this study will probably be, that when the seed is ready to be planted, the fruit is most attractive, mellow and palatable and thus the children are brought directly but *unconsciously* into contact with the great law of interdependence. The interest might be enhanced, if desired, by such a poem as Bjornsen's—

THE TREE.

"The trees' early leaf buds were bursting their brown.
'Shall I take them away?' said the frost, sweeping down;
'No, leave them alone, 'till the blossoms have grown'
Prayed the tree, while it trembled from rootlet to crown.

The tree bore its blossoms and all the birds sung.
'Shall I take them away?' said the wind, as he swung,
'No, leave them alone 'till the berries have grown,'
Prayed the tree, while its leaflets quivering hung.

The tree bore its fruit in the mid summer's glow.
Said the girl, 'May I gather the berries now?'
'Yes, all thou canst see, take them; all are for thee'
Said the tree, while it bent down its laden boughs low."

6. *October.*—Frequent visits to the trees,—painting of appearance—brilliant coloring of leaves, etc. Special points for the month—(1) study of the seeds of the trees and plants—collection and examination of the seeds, comparison as to size, number and protection of those that are self-sown with those that are disseminated by the wind, by animals and by man. (2) study of the animal life on the trees—cocoons and observation of which trees have been most used for the food and homes of animals.

November.—Children make group and individual trips to the trees and report conditions. Record changes in appearance by painting—form of bare trees observed and compared with September and October pictures. Special point of observation for the month—(1) the relation of bud formation and protection to the falling leaves,—which leaves fell first,—which tree has largest buds, etc. (2) Stories of trees illustrating poirts observed.

December.—Compare other trees with the *pine* tree. Large painting of the trees to illustrate the differences. Many stories, songs and games concerning the pine or Christmas tree. Special study for the month—the *growth of the trees.*

The children, knowing that their own *growth* is not recorded in any definite way upon their bodies are always delighted to find how the trees register it.

Suggestive questions for the children.—Do all the trees on these grounds with about the same soil, heat, light and moisture, grow alike? How shall we find out?

Examine twigs of the willow, oak, maple, elm, ash-leaf maple, and poplar.

Find the end of the twig. Go back until you find the first set of rings which go all the way around the twig. Show last year's on your twig. Find the last year's growth of a certain number of twigs for each of the trees, etc.

For seat work, the children might measure and then cut paper strips, indicating the total growth of eight or twelve twigs of certain trees. Children explain and compare work in class. If obstacles present themselves, as the adding of whole numbers and fractions, children should have all the time necessary in drill to overcome them.

Question.—How does it happen that if twelve willow twigs grew *thirteen yards* and twelve oak twigs grew *eighteen inches* during the year, that the trees are so nearly the same size?

Answer.—In measuring the twigs the children may have noticed that many delicate willow twigs have frozen back from a foot to a yard in length, while the oak which grew less was more carefully protected and sustained no loss. They have thus the data for answering the question. Let the children plan a way to keep the data gathered.

January.—Notice the effect of freezing upon the trees. Paint appearance of trees that can be seen from schoolroom window. Record condition of others in writing. Visit, if possible some conservatory where tropical plants may be seen—note temperature.—How does it happen that we can have oranges, banannas, etc., in the winter?

Special subject for the month—the industrial uses of wood—the study of paper, rubber, cork, rope, bamboo, etc., by means of specimens, pictures and reading lessons. For example—the following is a reading lesson for second grade children in this connection.

INDIA-RUBBER.

A queer tree once grew in a land south of us. It lived in a great forest with many other trees. The air was always hot and moist. The tree liked this, and grew very large.

One day an Indian came that way. As he passed under the branches the parrots screamed at him. A great snake glided across his path. Lizards crawled over the wet ground. But he did not notice them.

He went up to the tree and cut several gashes in it. Under the gashes he fastened little dishes. These were made of clay, dried in the sun. They were fastened to the tree with pieces of soft clay.

A white juice dropped from the gash into the dish. In the morning the Indian collected the juice. Then he built a fire of oily palm nuts. He had a stick with a clay mold on the end. He dipped the mold into the milky juice and held it over the smoke.

The juice soon hardened. Then he dipped it and held it over the smoke again. By and by he had a thick layer of rubber on his mold. This he cut off and hung up to dry. It was then ready to be made into many useful things. Name some of them.

February.—Paint appearance of trees and record any changes noticed, in writing. Special point for the month, the study of wood. Children collect specimens of wood from every available source.

The teacher should have ready specimens from each of the selected trees, etc.; large collections of the most useful woods for experimental purposes.

Is all wood alike? Probable experiments necessary in answering the question after observing differences in bark, color, etc.:

(1) Cutting of specimens of wood in two directions. (Ease in cutting.)

(2) Polishing and oiling of specimens.

(3) Note effect upon them of heat and moisture.

(4) Test each as a fuel—which ignites first, which burns longest.

Number.—(Relative strength of woods.)

(1) Test of strength of different specimens of wood. The specimens should be of uniform size and cut (perhaps ¼ × ¼ × 12 in.). The weights, varying from 1 to 15 pounds, might be bags of sand, prepared by the children. These should be hung exactly upon the middle point of the small beam of wood, in a uniform way during *each test*, to make the data gathered at all valuable.

(2) Note the appearance of wood exposed to the weather—which kind will endure most? Why?

(3) Weigh specimens of different kinds of wood, painted and unpainted. Record the weight of each. Soak them and weigh again. Compare results. Which takes up the most water? Use of paint to wood. Other inferences.

The children should visit any factories in the vicinity and see, if possible, under supervision, the processes of seasoning, warping, staining, polishing, testing, carving, etc. Find where trees come from. How the wood is cut. What parts of trees are utilized, and the kind and grain of wood best for furniture, floors, beams, and ornamental purposes.

The children should not be forced to make all these observations *for the sake of observing*, or because the teacher said so, but if they are told before going that when they come back they may choose the wood which they think will make the best table, desk, chair, ruler, pencil or floor and each chooses one special object to investigate, they *will* make all the observations naturally as means to an end, and the knowledge gathered will be much more definite. For seat work (1) the children label and classify the woods which they have gathered, (2) make a case to hold their specimens, (3) oil and polish wood, (4) study wood and tree through painting and modelling.

March.—Renew class visit to the trees. Paint appearances and keep record of the changes observed. Compare trees by means of action games, blackboard illustrations, etc.

Special point for the month—study the saps of trees—find out some things which they contain. Tap maple trees and make maple sugar, if possible.

April, May, June.—During the spring months the same line of observation will be continued. The children will be given ample opportunity to study outdoor conditions—germination, the return of the birds, the coming of insects and the opening of buds (catkins), flowers and leaves upon the trees. The work will be at all times synthetical rather than analytical. It will require much reading material and exercise in every form of expression.

The final test of the year's work will be the children's love for the trees and their wholesome desire to know more about them.

MATHEMATICS.

EDITED BY

ROBERT J. ALEY, Ph. D., Bloomington, Indiana.

HISTORY OF ARITHMETIC.

XXI—THE INTERNATIONAL DATE LINE.

If a traveler should start at noon on Friday and travel west at a rate that would take him around the world in twenty-four hours he would keep pace with the sun, and to him it would be Friday noon throughout the journey. On his return home, however, his friends would tell him that it was Saturday noon. Where should he have made the change from Friday to Saturday?

If, however, our traveler, traveling at the same rate should go east he would pass through midnight when one-fourth the way around, through what is to him Saturday noon when one-half around, through midnight again when three-fourths around, and would reach home at what he would suppose to be Sunday noon. His friends would again correct him and tell him it was Saturday noon. Where should he have dropped his apparent extra day?

In going west around the world, whether the voyage is made in a day or in a year *one* day is lost, and in going east around the world *one* day is gained. In order that the traveler's time may agree with that of the countries through which he passes, it is necessary that at some point he should add one day to his time if he be going west, and at the same point subtract a day if he be going east. The point where this is done is a point on the International Date Line. As a rule navigators make the change at the 180th meridian.

The 180th meridian does not at all coincide with the actual date line; that is, with the line which separates days, or the line upon one side of which it is Sunday and upon the other Monday.

All civilized countries either directly or indirectly get their time from Rome. The civilization that has moved west has carried its time with it, and so with that which has moved east. The two streams have met on the islands of the Pacific. The only exception to this is where the eastern stream crossed over into Alaska. The meeting of the two streams means a circuit of the globe, and therefore a difference in time of one day. The Date Line is then that line of separation between the islands settled from the east and those settled from the west. When America came into possession of Alaska she pushed the line out beyond her western borders.

The line north of Behring strait is not very definitely located. "South of the strait it passes west of Clark's or St. Lawrence island. Thence it passes west of Gore's island; thence southwest between the Aleutian islands and Asia. It then passes southwest, some degrees east of Cape Lopatka and the group of Kurile islands, thence just east of the Japan islands Jesso and Niphon, keeping west of Guadalupa and Margaret islands, but east of Bonin, Loo Choo and Patchoo islands and southeast of Formosa. The line then passes through Bashee channel, just north of the Bashee islands. It enters the China sea east of Hong Kong. It then passes south just west of the Philippine islands, but keeps east of Palawan island. It is here that it reaches its most western point, being about 116° E. longitude. It then takes a southeast course passing through the Sooloo islands south of Mindanao, and north of Gilolo. Thence it passes east nearly parallel with, but just north of, the equator to a point just north of Shank island, thence southeast, leaving High island, Gilbert Archipelago, Taswell islands and the DePuyster group on the northeast, thence to a point northeast of the Navigator or Samoan islands, thence south, keeping east of the Navigator, Friendly, Tonga, Vasquez, Kermadic and Curtis islands and west of the Society and Cook islands. Thence it continues south, bearing a little to the west so as to cross Chatham island, and thence to the South pole."

With the above description anyone can easily trace the line on a map. Some large map of the schoolroom should have the time permanently marked upon it for use in teaching Longitude and Time.

SHORT CUTS—V.

MULTIPLICATION.—(Continued.)

18. To multiply by any mixed number which is an aliquot part of 10, 100, 1,000, etc. This is readily understood by means of a few problems.

(a) Multiply 462 by $2\frac{1}{2}$.

$2\frac{1}{2}=\frac{10}{4}=\frac{1}{4}$ of 10.

$2\frac{1}{2}\times 462=\frac{1}{4}$ of 4,620=1,155.

(b) Multiply 748 by $9\frac{1}{11}$.

$9\frac{1}{11}=\frac{100}{11}=\frac{1}{11}$ of 100.

$9\frac{1}{11}\times 748=\frac{1}{11}$ of 74,800=6,800.

(c) Multiply 792 by $6\frac{1}{4}$.

$6\frac{1}{4}=\frac{25}{4}=\frac{100}{16}=\frac{1}{4}$ of $\frac{1}{4}$ of 100.

$6\frac{1}{4}\times 792=\frac{1}{4}$ of $\frac{1}{4}$ of 79,200=$\frac{1}{4}$ of 19,800=4,950.

19. To multiply numbers containing a large number of decimal places, when only a definite number of places is required in the result. To do this the first requisite is to begin multiplying at the left instead of at the right. The whole process is readily seen by means of the following illustration:

Multiply 3.62743 by 1.37543 and get the product correct to four decimals.

```
3.62743
1.37543
-------
3.62743
1.08822
 25389
  1810
   144
     9
-------
4.9891(7
```

In order to have four places correct we retain five in our multiplication, so that the proper amount may be carried for the fourth place. By beginning at the left and multiplying by 1, the place of the decimal point is found. Care must be taken in forming the other partial products to get them in the proper place.

20. To multiply without carrying as in ordinary multiplication.

This plan is not so short, but it varies the work and may lessen the danger of mistakes.

Square 76.

```
 76
 76
----
4936
 84
----
5776
```

For the first partial product write the squares of the units and tens in order, and for the second partial product write twice the product of the digits as shown in the problem solved.

Square 647.

```
  647
  647
------
361649
 4856
   84
------
418609
```

A study of this problem will show how it is applied to a number of three places. The reader will have no trouble in extending it to numbers of four or even five places. The same method is also easily applied to ordinary problems in multiplication, as the following examples will show.

96×74.

```
  96
  74
------
6824
  36
  42
------
7104
```

426×728.

```
  426
  728
------
280418
  126
  812
  182
------
307998
```

SOLUTIONS.

1. (a) A simple dissection which shows the truth of the Pythagorean theorem.

The accompanying figure (1) is taken from Mackay's *Euclid*.

A B G H and B C E F are two squares, A D = B C.

We are to show that the square on the hypothenuse, H D E K equals the sum of the squares on the base and perpendicular, i e. A B G H + B C E F.

The triangle H A D may be placed in the position of H G K, by swinging it counter-clockwise about H as a pivot. The triangle D E C may be placed in the position of E F K by by swinging it clockwise about E as a pivot. Hence the equality sought is shown.

(b) Fig. 2.—A B E F and B C D E are two equal squares.

A R = A G = B L = C M = D N = E O.

R B = H P = L C = M D = N E = O B.

The triangles R B H, B H K, H P F, F G H, L C M, M D N, N E O and O B L are all equal to each other.

Hence taking from each of the equal large squares the four triangles we have

Square A G H R + square H P E K = square L O N M.

But L O N M is the square on the hypothenuse of the right angled triangle of which H P E K and A G H R are the squares on base and perpendicular respectively.

The above proof is of Hindoo origin and is probably one of the oldest proofs known.

2. Problem 20, page 326.

How many acres in a field whose diagonal exceeds its sides by 16.568 rods?

Fig. 6.—The diagonal exceeds 1 side 16.568 rds. Line A X=16.568 rds.

The diagonal of a square whose side is one= 1.4142+ or $\sqrt{2}$.

The diagonal exceeds 1 side .4142+

16.568 rds.=.4142 of 1 side of field.

16.568 rds. +.4142=40 rds.—1 side of field.
40^2+160=10 A in the field.

—HERMAN KLOPFENSTEIN,
Collingswood, Ind.

3. To prove that the altitudes of an equilateral triangle meet in a point.

The altitudes of an equiangular triangle are perpendicular bisectors of the sides of the △.

Let O be the intersection of BD and AX.

O, being in BD, is equally distant from A and C.

O, being in AX, is equally distant from B and C. (The locus of all points equally distant from two fixed points is a straight line bisecting at right angles the line joining the fixed points.)

Hence AO=BO, and BO=CO, ∴AO=CO. (Things equal to the same thing are equal to each other.) ∴ is O in the alt. BD.

—EVERETT WILEY, Whiteland, Ind.

4. Prob. 8, page 273 is wrong. It should be $27.95. I. S. MORSE, Crumstown, Ind.

Are there any others wrong?

5. Problem 12, page 219.

A man earns $15 a week. He pays $4.50 for board, 70 cents for car fare, an average of $1.25 for clothing and $3.20 for all other expenses. How much can he save in a year? This is equal to the interest on what sum at 5 %.

$4.50 + $.70 + $1.25 + $3.20 = $9.65 = expenses each week.

$15. — $9.65 = $5.35 = amt. saved each week.
365 + 7 = 52½ = No. of weeks in a year.
$5.35 × 52½ = $278.96 + = amt. saved in one year.
$278.96 + .05 = $5,579.20.

Ross H. BAUMUNK, Saline City, Ind.

[Several persons solved the problem by considering the year to have 52 weeks. This gave a slightly smaller answer. The author evidently intended to use a whole year.—ED.]

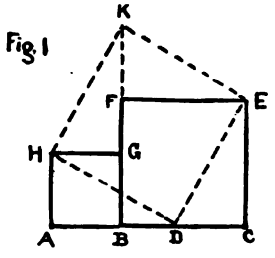
6. Problem 22 page 326.

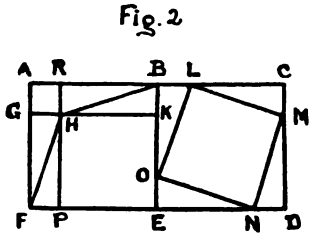
A triangular field, ABC, is 60 rods long and 20 rods wide. At what distance from B may a fence be built dividing the field into two equal areas?

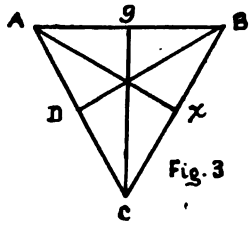
(a)

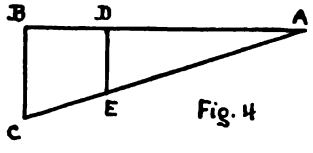
Having similar triangles, Fig. 4.

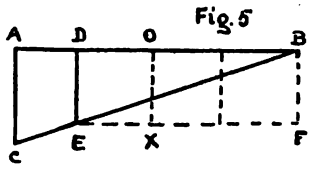
Triangle ABC:triangle ADE:: $\overline{60}^2$:X^2=
Substituting 600:300::3600:X^2=
Reducing 2: 1::3600:X^2=1800
X=42.42 rd

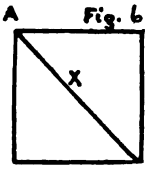












Rule:—Extract square root of one-half the square of the length. Or length ×½ length and extract square root.

—J. B. ANDERSON, Elizabethtown, Ind.

(b)

Suppose D E (Fig. 5) be drawn parallel to AC and dividing the triangle into equal areas. We have the triangle BDE, whose base is ½ of its altitude, because the base of the triangle ABC is ½ of its altitude. Draw the lines BF and FE and we have a rectangle whose length is three times its width.

(20×60)+2=600 area of triangle ABC
600+2=300 area of triangle BDE
300×2=600 area of rectangle BDEF
½ of 600=200 area of DEOX
$\sqrt{200}$=14.14 rds, length of DE
14.14×3=42.42 rd., distance from D to B.

—JAS. H. SCOTT, Jeffersonville.

CREDITS.

James H. Scott, Jeffersonville, 5, 6; Henry F. A. Meier, Edwardsport, 5; Harry Collier, Shir-

ley, 5, 6; Porter Shortridge, Medora, 6; T. A. Barrett, Mechanicsburg, 2, 6; C. V. Peterson, West Point, 5; John F. Hoeing, Huntingburg, 5; J. B. Anderson, Elizabethtown, 2, 6; G. B. Baird, Shelbyville, 2, 3; C. C. Kagey, Elizabethtown, 1, 2, 5; Jesse H. LeFavour, Van Buren, 2, 5, 6; D. W. Gillespie, Berdick, 2, 3, 5, 6; B. F. Shaw, Grandview, 2, 5; J. G. Sipple, Cataract, 1; Ross H. Baumunk, Saline, City, 2, 5; Jess MacCain, Camden, 6; Everett Wiley, Whiteland, 3, 5; C. E. Cranford, Mulberry, 5; Howard Kesler, Conroe, 5; Lois Foust, North Judson, 2, 5 6; Pearl Hungerford, Blue Ridge, 2, 3, 5, 6; Emma Holem, Plymouth, 2, 6; Joseph McCauley, Whitfield, 5; Mattie C. Bradley, Folsomville, 5, 6; Geo. F. Meltzer, Meltzer, 2, 5; Elza Montgomery, Felters, 6; Eva Wildeson, Auburn, 5; J. C. Glass, Clifty, 2, 6; Barclay O. White, Westland, 5; Stella Wolfe, Brazil, 2; B. H. Truman, Larwill, 2, 5, 6; Faye M. Fair, DeKalb, 5; Jess Blue, Camden, 5, 6; Inez Leech, Monroe City, 5; Jennie Black, Brazil, 5, 6; Agnes Goss, Henryville, 1, 5; Lewis M. Sears, Leipsic, 6; John A. Bear, Mill Creek, 5, 6; P. D. Abell, Velpin, 2, 5; E. H. Boner, Coal Creek, 2, 3, 5, 6; A. A. Mourer, Goodland, 2, 5, 6; Hugh Baker, Smithville, 2, 6; I. S. Morse, Crumstown, 2, 3, 5, 6; H. F. Smith, Rockport, 5; F. B. Williams, Freedom, 5, 6; Charles Kizer, Linn Grove, 2, 3, 5, 6; Enos M. Hoover, Elkhart, 2, 5, 6; Elias E. Landis, Camden, 5; Herman Klopfenstein, Collingswood, 2, 6; Erma Wagoner, Gwynneville, 5, 6; Mary Morris, Mace, 5; C. M. Scott, Ashersville, 6; Chester H. Forsythe, 3.

The solutions sent in were exceptionally good. Let us have a larger number of replies for the next set.

C. M. Scott of Ashersville sends the following formula for bisecting a triangle by a line parallel to one side: Call the height of the triangle c and the base a, then the distance of the line of equal section from the vertex is $\frac{c}{a}\sqrt{\frac{a^2}{2}}$

CORRECTIONS.

The following problems are reported as wrong:

No. 3, page 367 should be $64.

No. 19, page 252 should be 224—.

No. 8, page 300 will come out as in book if rate of discount is changed from 8 % to 7 %.

No. 38, page 303 should be $59.64.

No. 31, page 327 should be 58.8.

No. 35, page 327 should be 4.824.

No. 7, page 338 should be 104.7+.

No. 7, page 160 should be 19.14042 instead of the answer published in February EDUCATOR.

No. 1, page 325 should be 6.

No. 4, page 283 should be 3145.84.

No. 12, page 228 should be 1980.

SOLUTIONS REQUESTED.

13. Problem 117, page 198.

14. Problem 34, page 327.

15. Problem 9, page 344.

16. J. C. Glass sends this solution to problem 35, page 221.

$80=cost per acre.

1½ in.=diameter of a dollar.

80×1½ in.=120 in.

¼ of 120 = 30 in, one side of a square around which $80 will reach.

30 in. = 2½ ft. 2½×2½=6¼ sq. ft. area of square.

48560 = No. of sq. ft. in 1 acre.

43560÷6¼ = 6969.6 No. of acres in field.

Is this solution correct? Is the method general?

17. Three circles each containing 100 acres are tangent to each other. What is the area enclosed by them?

NOTES.

Dr. Harris Hancock, for several years an instructor in mathematics in Chicago University, has been appointed professor of mathematics in Cincinnati University. He succeeds Professor E. W. Hyde, a well known teacher and author.

The American Book Company has recently issued *Primary Exercises in Arithmetic*, by H. J. Silver. There are four books in the series. They contain a great number of set problems in number combinations with blank spaces for solutions. The exercises are good and well graded. They will certainly be a boon to the busy teacher.

Plane Trigonometry, by E. A. Lyman, Michigan State Normal, and E. C. Goddard, University of Michigan, has just appeared from the press of Allyn & Bacon, Boston. The strength of the book consists in the admirable combination of analytic and applied trigonometry. Most English texts are very strong on the analytic side, and weak on the applications, while most American books are just the reverse. The book is rigid from a mathematical point of view. It is so arranged that it will surely prove interesting to the student. A good set of five place tables adapted from Gauss is inserted.

Dr. C. A. Waldo, Professor of mathematics in Purdue, is the efficient secretary of the Association of Colleges and Secondary Schools of the north central states.

S. C. Phipps, formerly a well known teacher of Washington county, is now a graduate student in astronomy in the university of California. He will receive the degree of Ph. D. at the end of the current college year.

Short Cuts 18 and 19 were sent in by Mr. Chas. Kizer. It is earnestly desired that all readers who have *short cuts* that have proved useful in the schoolroom or in business, send them in. By doing this many others may be benefited.

Rufus L. Green, who for many years was one of the well-known mathematicians and teachers of Indiana, has recently been made major professor of mathematics at Leland Stanford university. This is a deserved promotion. Few men have greater organizing ability than Professor Green. Under his management the department of mathematics at Stanford will make rapid strides forward.

BITS OF INFORMATION IN GRAMMAR.

COMPLETE ANALYSIS OF THE COMPLEX SENTENCE.

The remarks made in connection with the analysis of the simple and compound sentences in preceding numbers of THE EDUCATOR will apply in general to the analysis of the complex sentence. The work is to be a growth, the pupil mastering it point by point, until he is able to give a complete analysis, in substance, something like the following:

Christianity proves itself as the sun is seen by its own light.—Coleridge.

1. Classify the sentence and give reasons.

a. On basis of purpose.

b. On basis of number and relation of thoughts expressed.

2. State the principal elements of the thought and give reasons.

3. Give the principal parts of the sentence and reasons.

4. Give the principal word in each part, the modifiers of it, and all the modifiers of these modifiers. Give a reason for each modifier. In giving modifiers analyze phrases and clauses, giving uses of the connective words.

On basis of purpose, this is a declarative sentence, because its purpose is to give information. On basis of number and relation of thoughts expressed, it is a complex sentence, because it expresses one principal thought and one subordinate.

The thought subject is the idea, *Christianity*, because it is the idea about which the mind asserts something. The thought predicate is the idea, *proves itself as the sun is seen by its own light*, because it is the idea which is asserted of the thought subject. The thought relation is one of agreement, because the thought predicate belongs to the thought subject.

The subject of the sentence is the word, "Christianity," because it expresses the thought subject. The predicate of the sentence is the words, "proves itself as the sun is seen by its own light," because they express the thought predicate. The copula is implied in the word "proves," which if expanded, would be *is proving*, in which case the copula would be the word "is," because it would express the thought relation.

The principal part of the predicate is the word, "proves," which is modified by the word, "itself," a direct objective modifier, because it is a substantive modifier which expresses an object of thought that is directly affected by the attribute expressed by the word, "proves."

The word, "proves," is also modified by the clause, "as the sun is seen by its own light," an adverbial modifier, because it is an attributive modifier which changes the meaning of an attributive word by expressing an attribute of an attribute. It expresses the adverbial idea of manner. The subject of this clause is the words, "the sun," because they express the thought subject. The predicate is the words, "as seen by its own light," because they express the thought predicate. The copula is the word, "is," because it expresses the thought relation.

The principal part of the subject of the clause is the word, "sun," which is modified by the word, "the," a limiting adjective modifier, because it is an adjective modifier, the chief purpose of which is to narrow the meaning of the word, "sun." The principal part of the predicate is the word, "seen," which is modified by the expression, "by its own light," an adverbial modifier, because it is an attributive modifier which changes the meaning of an attributive word by expressing an attribute of an attribute. It expresses the adverbial idea of means.

This expression is also a simple, adverbial, prepositional phrase of which the word "by" is the relation word, and the word "light" the principal word. The word "light" is modified by the expression, "its own," an emphatic possessive modifier, because it is a substantive modifier which changes the meaning of a substantive word by expressing the attribute of possession.

The connective is the word "as," which has three uses and is a compound conjunctive adverb. It modifies the word "proves," in the principal clause, and the word "seen" in the subordinate clause. It is an adverbial modifier

in each case, expressing the adverbial idea of manner. It expresses the relation between the thought expressed by the principal clause and the thought expressed by the subordinate clause. J. B. WISELY.

THE SCHOOL CHIEFS MEET IN CHICAGO.

The session of the superintendents just held in Chicago was easily up to the average in point of the importance of the questions considered, and certainly above the average in the number of eminent educators taking part in the deliberations. It was what may be termed a lively meeting. One could wish that both 'our kind detractors' and every man or woman who is not altogether proud of being a teacher might have been there. Hardly another thing so inspires a disaffected teacher as to mingle with other teachers who have a zeal for their work. Hardly another thing is helpful in so large a degree to the zealous, themselves. If there were no other good it would pay to come up once a year to this mount of transfiguration; for merely to stand in the presence of the faithful who have grown gray in the service, as so many of them have, who have given their lives to the work, who did not fall out by the wayside, makes one feel that it is good to be there, and sends him back to his own work with new zeal and new inspiration.

In saying that it was a lively meeting let it be understood that the interest was close, and that a good live program was handled by good live men. Lots of earnest, steady teachers, like lots of other people are apt to be prosy, and they sometimes get on programs, but there was no place for them here.

The keynote of interest was touched when Hon. Howard Taylor came to represent Mayor Harrison in a short address of welcome. Himself a practical politician, he declared that the schools must be kept free from politics, that the teacher must have a safe tenure of office, and that from kindergarten to university there should be freedom from sect.

Then Dr. E. B. Andrews spoke a welcome from the Chicago school board. He referred to an impression which had gone forth among the "Uitlanders" that in Chicago there was one Jonah, a prophet, and that there were many people who did not know their right-hand from their left-hand—also much cattle. He hoped that whatever of truth the visiting teachers might find in such reports they would at least find themselves among friends and on ground that was educationally hallowed.

Dr. Nicholas Murray Butler in a scholarly address traced the movement in the search for educational truth, showing that where action had gone too far in one direction reaction had set in to restore the equilibrium. The process was thus one of evolution. In the past the individual was everything; now he is nothing except as a member of society. True individualism, which would enrich the life of each with the possessions of all, is well nigh supreme, and sham individualism, which would set every man's hand against his fellow, is disposed of, let us hope, forever. There is much reason to feel gratified, but pride in achievement should yield to a sense of responsibility for the future.

Discussing this paper, President Eliot of Harvard pointed out four fundamental changes in American education during the last half century. (1) Greater freedom in choice of studies. (2) Motives in discipline: we no longer appeal to fear of pain, satire, etc., but to love of study, love of right, spontaneous obedience. The change is from driving to leading. (3) Industrial changes consequent upon crowding in large cities. This means the reduction of systems to machine work—marking and grading systems—crowding—getting away from nature. (4) An appeal to teacher, parent, child, to increase human joy both for self and others by really *doing* something, by getting where we want to be and helping bring others where they would be. The great movement is toward *freedom*. Rousseau stood for liberty, and this one noble trait has almost sanctified a miserable wretch.

It was a pleasure to follow Aaron Gove as he traced out the trail of the city superintendent from Providence in 1846 to its present broad and national ramifications, commencing for the most part among ministers of the gospel and passing, as the need arose, to practical, trained men. His review gave an opportunity for a beautiful tribute to Commissioner Harris, for a good-natured satire upon the successive fads that have come and gone, for a word in praise of the Indianapolis school law, and for the expression of a belief that after all is said there is no final authority—each man must "treck" upon his own domain. In common with many others, Mr. Gove regretted the misconstruction placed upon the phrase "one-man power" of which so much has lately been said.

Superintendent Jordan of Minneapolis modified Mr. Gove's subject so as to read either "trail" or "trial." He thought the latter preferable. He had tried two ways of dealing with his board of education,—one was to fight them,

the other was to let them fight him. Neither had proven satisfactory. Superintendent Gorton of Yonkers later suggested that a better way was to pit one section of the board against the other and let them fight it out while the superintendent goes serenely on his way. Mr. Jordan deprecated the impression so prevalent that the board is the enemy of the teacher. Cooperation is the true method. One danger with superintendents is the burden of responsibility which they feel as reformers. It was noticed that such usually began with great enthusiasm, settled down into quiet disappointment, and ended finally in that haven of so many school teachers, life insurance.

The spelling reform came in for a share of attention. A report was submitted asking the National Association to appropriate $1,000 yearly for five years and to create a committee who were to become an eminent advisory body—a quasi authority. The report was to include W. T. Harris, W. R. Harper, Editor Ward of the New York *Independent*, W. D. Howells, Editor Smith of the *Century Dictionary*, Nicholas Murray Butler, E. B. Anderson, and one representative each from Yale and Harvard. By action of the department the report was tabled for one year, after a warm discussion.

Perhaps the liveliest interest of the whole meeting was that shown in the discussion of Alcoholic Physiology by W. O. Atwater and others. The experiments that have been performed at Wesleyan university were explained, and Professor Atwater expressed his belief that in the light of present knowledge the teaching of scientific temperance should be revised. All he contended for was truth. He was not blind to the danger, and he did not impute wrong motives to those who differed from him. He would neither teach that alcohol in small quantities is harmless, nor that it is always harmful. There are children in school whose parents use wine or beer or liquor. The child is taught that alcohol is a poison but does not see his parents succumbing to it, and so he discounts all moral teaching. Teaching that is physiologically wrong can hardly be ethically or pedagogically right. When asked which boy had greater ground of complaint, one that was taught that alcohol was a poison and grew up to learn he had been deceived, or one that was taught it was food and grew up a drunkard, Professor Atwater replied, "Both should complain, and you have no right to distort the facts either way."

Mrs. Hunt of Boston was present with a vigorous protest from the W. C. T. U. The result of the discussion was the following resolutions:

In consideration of the deep interest which this department takes in every legitimate effort to advance the cause of temperance and of its desire to promote in the schools of the country the teaching of temperance based on sound pedagogical and scientific principles; therefore be it

Resolved, That the chairman appoint a committee of seven whose duty it shall be to report upon the teaching of physiology in the schools, especially with regard to the condition and progress of scientific inquiry as to the action of alcohol on the human system, and to recommend what action if any by this department is justified by the results of these inquiries.

Throughout the session there was a marked disposition to correct the impression that the average superintendent wishes to pose as a man of absolute authority. Dr. Butler so well expressed the sentiment which seemed to prevail that he may be quoted:

"We are told that to have an expert as superintendent and to ask him for advice, with a predilection in favor of following that advice, is the establishment of one-man power. That is amusing. To what better are we entitled, and what can be more democratic, than to put a public servant out in the light of day, prescribe his duties, compel him to perform them in daylight, and to hold him responsible? If that is one-man power and undemocratic, then some one will have to make the most of it, because I think an intelligent and progressive democracy intends to have a great deal of it—more every year, and more in every branch of our public service."

On the motion of Commissioner William T. Harris resolutions were adopted providing for the appointment of a standing committee of six to aid the national bureau of education in its work. The following committee was named: Nicholas Murray Butler, Andrew S. Draper, N. C. Dougherty, G. R. Glenn, E. O. Lyte and Aaron Gove.

In the closing address of the meeting, President Benjamin Ide Wheeler of California pointed out clearly some of the desirable things in secondary education. The high school should no longer be a preparatory school; neither should it become a college in miniature, as the tendency seemed to be, with Greek letter fraternities, laboratories for all departments, athletics, and the unfortunate multiplication of subjects. Teach

the child to take care of his body and to use his mind intelligently. The great thing in all education is to acquire the power to think consecutively—to put out one's hand, close the fingers, grasp the subject with the mind and make it hold on to do what is desired. Never mind memorizing. When a lesson is absorbed it may be forgotten. What we remember is too often but the floating scum that stands in the way of clear, sane judgment. Preparation at any stage is merely fitness to go on.

The next session of the department will be held in Chicago, with L. D. Harvey of Wisconsin as president.

TO THE READERS OF THE INLAND EDUCATOR.

One of the practical problems for the superintendent and teacher is to make the curriculum fit the child. To do this as it should be done, it is of the greatest importance to know as much as possible about child life and child development. One thing that should be known is the different stages or nascent periods in development. With the view of finding out more about this last point the undersigned has gathered many data from general and educational literature, and directly from teachers. One thing that seems to be pretty well established is that between the stages of development (infancy, childhood, youth, etc.) there are short transitional periods of disturbance and preparation for the stage which follows. Many things indicate that from seven to nine, roughly speaking, there is such a transitional period. But there needs to be more evidence. I have found the teachers of Indiana always ready to respond to work of this kind, and I hope that they will be willing to sacrifice enough time to answer briefly but clearly the questions which follow. In return for this assistance the results of the study will be published in THE EDUCATOR.

I care more especially for returns from teachers and superintendents who have children under ten years of age.

Please give especial care to the 1, 2, 3, 5 and 7.

1. What year's work do you have? What subjects are taught regularly? What subjects incidentally?

2. In what subjects do you have most difficulty in getting desirable results?

3. If you were to offer to do any kind of work (tell a story, examine plants, do number work, sing, etc.) that the children wish, what do you think would be their preference? their second choice? third? etc.

4. Do your children have difficulty in holding the book, keeping the place, and following the work?

5. What are the most striking physical, mental and moral characteristics of the children about eight years of age? Do children who do not enter school until the age of eight have the same characteristics?

6. Are your children, as a rule, neat in the use of writing and drawing materials, or are they apt to get things mixed up, let pens and pencils fall upon the floor, get ink on their fingers, etc.?

7. If your only purpose were to make the children happy, and school thoroughly enjoyable, what besides play would be three lines of work you would pursue?

8. Do children at about seven or eight who are losing their first teeth, and getting their permanent teeth, make as rapid progress as they did before this time, or after they have a number of their permanent teeth?

Please send returns to

E. B. BRYAN,
Clark University, Worcester, Mass.

ANOTHER WORD ABOUT THE ARYANS.

In *The Outlook* for March 10, 1900, on page 602 may be found a question from a correspondent, and also the answer:

Can you direct me to some authorities on the topic "The Origin of the Aryans?" C. H. W.

This is a controverted point the prolix and baffling discussions of which we regard as utterly profitless to wade through. The latest authority on the subject sums them up by saying that they "existed probably in the steppe region between the Carpathians and the Hindu-Kush" (so in "Man Past and Present"—the Cambridge Geographical Series, Macmillan, New York.)

TWO EXAMPLES OF EIGHTH GRADE WORK.

THE POET'S SONG.

It had been raining, and Alfred Tennyson was tired of writing, and he thought he would take a nice walk into the country.

He went through town on his way, and the wind was blowing gently.

The nice, tall wheat was waving to and fro.

When he was about one mile from town he sat down in a lonesome place to rest and to look at the beauties of nature. While he was sitting there he began to sing a very beautiful song about eternity.

This song was so sweet that the wild swan

stopped and listened to him on her way to the forest.

The lark also stopped close by him to listen.

The swallow had been chasing the bees, but when she heard him singing she stopped to listen, and forgot about the fun she had had chasing the bees. The snake was joyfully surprised and slipped under a little limb to listen to him.

The wild hawk had captured a bird for its supper, but when he heard this song he still kept his foot on it, but listened to the music.

The nightingale is a very beautiful singer, but she thought that Tennyson could sing better than she could. She had sung so much that she had grown tired of her singing, and would rather hear some one else sing. He was singing about what a happy time there would be after the people here on earth had died and gone to a better world above, where there will not be any sin or sorrow, but happiness and gladness all the time. This is the reason that the nightingale thought that it was such a beautiful song. I think that Mr. Tennyson has written a beautiful poem.

MAUD THORNTON, 8th year,
District No. 8, Bloomington Township,
Monroe County, Indiana.

THE SNOW STORM.

It was a short December day when Mr. Whittier was sitting in his writing room.

He noticed the sun, when it arose that morning, that it did not shine bright like it does on a warm sun-shiny day.

So he compared it to the moon, because it did not give any more light than the moon.

By noon the sky became cloudy and the sun sank behind a cloud early in the day, and so it seemed very lonesome to him.

This was a sign of a snow-storm.

So you had to wrap up well if you wanted to keep warm this cold day, for Mr. Whittier said no coat, even if it was a homespun coat, would keep out the cold, blustering wind.

Mr. Whittier lived near the eastern coast of this country, and so he could hear the roar of the ocean, for the wind was blowing so hard and cold.

He could hear the wind whistling round about him.

The day was not warm for the sun was not shining, and so night came on early.

When night came on it began snowing, and before early bed time the snow was very deep.

The snow-flakes fell so fast that he compared them to a swarm of bees.

That night before he went to bed, he went to the window and looked out, and saw that the snow was very deep on the window-frames. The ground looked like it had a new covering for it.

Everything looked white and beautiful.

He arose early next morning, and looked out but it was still snowing.

It snowed and stormed all day.

The snow-flakes were in all kinds of shapes, and fell very fast.

When the second morning dawned, the world did not look like it did the morning before, for the sky was clear and blue, and no sign of a cloud could be seen.

He could see no earth below but a carpet of snow.

There was a blue sky above, and a carpet of snow below.

All the familiar old things around looked very much different, for they were all white with snow.

Some of them looked like towers or domes, some looked like mounds.

The road that went past the house, could not be seen, for the snow had drifted as high as the fence, and by this we know that the snow was very deep.

The post where they hitched their horse, looked like a little old man, with a high crowned hat on, and his coat unbottoned, and hung loose about him.

The well curb, had a roof of snow, which looked liked a roof of a Chinese house. The long sweep of the well, put him in the mind of Pisa's leaning miracle.

I think Mr. Whittier has written a very beautiful description of this poem called, "The Snow Storm."

MAUDE MORRISON, 8th year,
District No. 8, Bloomington Township,
Monroe County, Indiana.

THE ELEMENTARY SCHOOL RECORD.

Only last month THE EDUCATOR expressed the belief that Dr. John Dewey's book, *The School and Society*, was really the promise of another, likely to follow soon. That promise is already finding realization in the appearance of a series of monographs published monthly, and bearing the title which stands at the head of this paragraph. The price is fifteen cents each, or $1.25 for the whole series of nine. Dr. Dewey himself is the editor, and judging from the February or initial number he will write a considerable part of each. The contributions in general will be by the teachers of this unique school which aims to apply the methods of modern psychology to a very practical education. It is safe to say that

no other educational experiment has been observed with greater interest than the working out of these problems by Dr. Dewey and his associates in this school. These monographs may be expected to give a detailed account of the work. The February number has, as its special feature, a discussion of the principles of education as applied to art, with a report of all the work of the six- and seven-year-old children. The March number discusses music and song composition, with words and music of songs composed by children of different ages, and the work of the eight-year-old children. Succeeding issues will deal with textiles, sewing, cooking, geography, nature-study, experimental science, history, constructive and manual work, etc.

AMONG THE NEW BOOKS.

The International Geography, "by seventy authors, with 488 illustrations," is a comprehensive geographical reader or reference book describing the countries of the world. It is interesting to note that each of the seventy authors was at liberty to write in the language with which he was most familiar, in order to secure the greatest accuracy of description and thus make the work as authoritative as possible. The fact that such men as Hon. James Bryce, W. M. Davis of Harvard, J. Scott Keltie of the Royal Geographical Society, Professor Nansen and Sir John Murray as Arctic explorers are among the editors, will be sufficient guarantee of the thoroughness of the work. Part I devotes 122 pages to the principles of geography, physical, mathematical, political. Part II takes up the countries of the world by continents. The space allotted to each country is proportionate to its importance. The United Kingdom gets fifty-six pages, the United States sixty-two, France twenty-three, Brazil and Australia twelve each, and so forth. Professor Davis's treatment of the United States will serve to illustrate the general method. He considers first the historical and political geography; next regional geography, which is a study of the Appalachian belt, the Atlantic coastal plain with its shore line and islands, the various divisions of the Allegheny plateau, the Ohio region and prairies, the southern coastal plain, the Mississippi valley, the great plains beyond, the Rocky mountain system, the Pacific slope and Alaska. Dr. Davis has much to say of geological forces and features, especially of glacial action. While the subjects named would indicate a study of physical features mainly, it should be said that due attention is given to man and his relation to these features. Statistical tables and bibliographies follow the various articles. The volume is completed with a thirty-five page index. Hugh Robert Mill is the general editor. [D. Appleton & Co., 1088 pages, $3.50.]

The name of Dr. Horace S. Tarbell as the author of a *Complete Geography*, just published will go a long way toward commending the book to teachers who are at all interested in the subject. A careful examination of the book itself reveals an attractive and thorough piece of work. The maps are excellent and clear in a high degree. The illustrations are profuse, and also of good quality. Nearly all are half-tone reproductions of photographs, and one misses those impossible pictures that characterized some of the older books. It is easy to see from the pictures alone that the author is thinking of the earth as the home of man, so that the commercial, social, and political features are made prominent. Part I of the book gives the fundamentals of mathematical geography and the influence of the elements upon the surface of the earth. Part II is descriptive of the earth as it is to-day—physical features, political divisions, and man in his relation to these. Part III is a rational study in the generalizations of geography. It is easy to believe that Dr. Tarbell has profited by the mistakes and weaknesses of other books on the subject, and that he has made a clear and simple, yet comprehensive book. [Werner School Book Co., Chicago, $1.00.]

Few things we read are more delightful than personal reminiscenses of authors whom we have learned to know and love. When the author chances to be one who was habitually so shy and reserved as Hawthorne was the interest in anything personal is to that degree increased. Hence teachers who use the "Riverside Literature Series" will welcome in No. 138 the personal preface to the *Scarlet Letter*, which Hawthorne calls *The Custom House*, and his description of a street in Salem which he calls *Main Street*. The introduction and notes are both brief.

W. D. Howells' *Doorstep Acquaintance and Other Sketches* forms the title to No. 139. The charm and freshness of Mr. Howells' style will make this little group of stories acceptable. The other sketches are *Tonelli's Marriage*, *A Romance of Real Life*, and *At Padua*. The group is prefaced by a biographical sketch of the author. Both the above volumes are edited by H. E. Scudder. [Houghton, Mifflin & Co., 15 cents each.]

Coincident with the demand for the study of Spanish has been the appearance of books devoted to the subject. Among them is an American edition of *Schilling's Spanish Grammar*, translated by Frederick Zagel. To say that the work has gone through many editions in French, Italian and German is to recommend it to English students also. The translator has endeavored to carry over into this edition the spirit of the Spanish language and at the same time adapt it to American modes of study. At first thought the absence of a vocabulary seems to be a defect, but the author's plan of having the student construct his own seems really preferable. English-Spanish and Spanish-English exercises alternate. [Cassell & Co., New York, 340 pages, price not quoted.]

A new text-book on botany by George Francis Atkinson bears the title *Lessons in Botany*. It embodies the most advanced ideas as to the teaching of this science, and although the work is brought within the limit of 365 pages the author gives us a good deal of science and at the same time makes so interesting a study of plant life that his book is at once both popular and scientific—a very happy medium for secondary schools. The treatment includes Physiology, Morphology, and Ecology. There is provision from the first for both laboratory and out-door work. The cuts are clear and abundant, and the arrangement of the text for general reading, exercises for pupils, and demonstration by the teacher makes the book a valuable guide to the study. [Henry Holt & Co., $1.12.]

Number three of the "Riverside Art Series" fully sustains the interest created by the two numbers that preceded it. This number is devoted to the great master, Michelangelo. The growing interest in this unique artist, both sculptor and painter, justifies the selection of his work as the subject of study. The editor of the series well says that he repels by his awfulness at the same time that he attracts by his masterful skill. He was in the world, and yet hardly of it. "He stood apart, towering like a genius above his fellow men, a madonna, David, Moses." "The Pieta" and several details from the Sistine chapel are among the sixteen pictures reproduced and described. [Houghton, Mifflin & Co., 96 pages, 30 cents.]

Ralph Waldo Trine has added to his list of excellent monographs one entitled *Character—Building, Thought Power*. It is an earnest address of some thirty pages, based upon the proposition that the thought is always parent to the act. It holds that we entertain what thought we will, and that the power to direct and command thought may and should be cultivated. It appeals to the highest impulses and is worthy of a place in every school library. [T. Y. Crowell & Co., New York.]

The publishers of *The Rational Writing Books* claim for their system that it facilitates a combination of speed and legibility. The vertical system is used, and the noticeable feature of the copy is the simplicity of the letter forms and the easy connections between letters. Numbers one and two have simple cuts above the copies. This seems a commendable feature. [Werner School Book Company, Chicago, Six numbers, 72 cents per dozen.]

Picture Study in Elementary Schools forms the general title for a group of four excellent books by L. L. W. Wilson. Two of the books are for pupils, two for teachers. Book I for primary pupils, contains fifty full-page reproductions of famous pictures with as many choice bits of poetry on the pages facing. They are arranged by months—September to June—and in many instances both picture and poem are suited to the season. The arrangement of book II is similar, being intended for grammar school pupils. Combining thus beautiful pictures and choice sentiment, the result is a delightfully artistic set of books offering the groundwork for a very efficient study of the masterpieces. The scheme is largely promoted by two handbooks for teachers, corresponding to the two books for pupils, containing the same reproductions and enough descriptive matter besides to inform the teacher about both picture and painter. There are many estimates of pictures by eminent critics, such as Ruskin, Hunt, Gautier, Pater and others; to which are added numerous anecdotes and incidents that will add much to the interest of the study. [The Macmillan Co. Price of books for pupils 30 cents each; of those for teachers 90 cents each.]

Professor Charles Reid Barnes of the university of Chicago has simplified his work on botany so as to bring it within the limit of 300 pages, thus adapting it to the use of schools which can give only a part of a year to the subject. The new book is entitled *Outlines of Plant Life*. The author explains that the abridgment is accomplished by omissions and eliminations more than by simplifying. His method conforms to the most approved plans of studying botany, and he

devotes a large part of the book to plant physiology and ecology. Directions for laboratory work are given at short intervals. The drawings are clear and suggestive. [Henry Holt & Co., New York.]

A neat little volume of forty pages contains *Rip Van Winkle* and *Legend of Sleepy Hollow*, rewritten for children. It may well be doubted if any reproductions of Irving's charming sketches will ever quite equal the original. It must be said, however, that the effort by Lucy M. and Roger A. Simonson to bring these two stories within the easy comprehension of children is a success. There are two illustrations, and the booklet is made up in an attractive way. [Eaton & Co., Chicago, 10 cents.]

That long-time student of literature, folk lore and fable, Dr. H. E. Scudder, has added to his delightful books for children *The Book of Legends*. It includes, among eleven others, "William Tell," "The Wandering Jew," "The Flying Dutchman" and "The Seven Sleepers of Ephesus." They are told in Dr. Scudder's delightful style, and being classics in subject are worthy to go both into schools and homes. [Houghton, Mifflin & Co., 16 mo, 50 cents.]

The publisher of "The Modern Music" books have prefaced the series by a *Primer of Vocal Music*. The well-known theory of *interest* upon which these books are based is consistently maintained in this primary book. Miss Eleanor Smith has brought together a most delightful collection of songs that are at once both beautiful and fine. It is safe to say that many a child who might otherwise remain without a love of music, and whose faculty of enjoying music might otherwise remain undeveloped, will find here a wholesome and effective stimulus. There are a few little studies based upon the melodies of the songs, but real training in the principles and elements is reserved for the next book in the series. [Scott Foresman & Co., Chicago.]

BOOKS RECEIVED.

The Macmillan Co. *Elementary Chemistry for High Schools and Academies*, by Albert L. Arey, C. E. 271 pages. 90 cents.

The Macmillan Co. *The Teaching of Elementary Mathematics*, by David Eugene Smith. 312 pages. $1.00.

The Macmillan Co. *The Nature and Work of Plants*, an introduction to the study of botany, by Daniel Trembly Macdougal, Ph. D. 218 pages. 80 cents.

The Macmillan Co. *First Reader*, for use during the first year of school by Norman Fergus Black. 141 pages. Illustrated, 30 cents.

The Macmillan Co. *The Nervous System of the Child*, its growth and health in education, by Francis Warner, M. D. 233 pages.

The Macmillan Co. *Handbook of Domestic Science and Household Arts*, for use in elementary schools, with a preface by Mrs. Ellen Richards. Edited by Lucy Langdon Williams Wilson, Ph. D. 407 pages. $1.00.

The Macmillan Co. *Letters from Queer and other Folk*, by Helen M. Cleveland. Book I for lower grammar grades. 125 pages. 30 cents. Book II for higher grades. 141 pages. 35 cents. The third volume is a manual for teachers. 242 pages. 60 cents.

The Macmillan Co. *One Year of Sunday School Lessons for Young Children*. A manual for teachers and parents, by Florence U. Palmer. 226 pages. $1.00.

YOUNG PEOPLE'S READING CIRCLE.

Thinking that the circular of information recently sent out by the secretary of the reading circle board to the county superintendents may not reach all who are interested, some of the information it contains is given here.

1. Each pupil that reads one or more of the Y. P. R. C. books in a given year is a member of the circle for that year, and should be presented with a membership certificate. When the certificate shows that the person named thereon has been a member of the circle for four years, he will receive a diploma upon presentation of the certificate to the county superintendent.

2. We have a large supply of membership certificates and diplomas, and will send them to county superintendents in any quantity desired, by prepaid express.

3. Teachers holding two credits (one professional and one general culture) are exempt from the examination in the science of education (theory) and literature, on application for county or state common school license during the year in which the credits were received. The credits made in the teachers' reading circle examination July 15, 1899, will exempt the holders from examination in the above named subjects throughout this year, including the August examination, 1900.

Teachers holding eight credits (four professional and four general culture) are entitled to

diplomas. These diplomas exempt the holders from the examination in the science of education (theory) and literature, on application for professional, life state, and state or county common school license.

4. Teachers holding eight or more examination credits should send their credit statements to the secretary of the board, who will forward the diplomas by return mail.

SPECIAL PARTY TO CHARLESTON, S. C., AND THE N. E. A.

As usual, Chas. F. Patterson, of THE EDUCATOR, will conduct a special party to Charleston, leaving all points in Indiana on Thursday, July 5th, 1900.

Arrangements have been made for special trains from Louisville and Cincinnati via the Southern Railway, combining the parties at Lexington, Kentucky. Stops will be made at Asheville and other points of special interest en route.

The sessions of the N. E. A. will be concluded in ample time to make the journey to the Paris Exposition.

The return trip from Charleston may be made via Washington, D. C., where tickets may be deposited until September 1st, 1900.

Parties wishing information regarding this trip may address

CHAS. F. PATTERSON,
Edinburg, Ind.

INDIANA STATE BOARD QUESTIONS FOR MARCH, WITH DISCUSSIONS.

HISTORY.

1. What cities in Europe were especially interested in commerce with the East Indies in the 15th century, and by what routes was this commerce carried on?
2. What European nations sent out expeditions of discovery and to what parts of America did they lay claim respectively on account of discovery?
3. On what grounds did the Colonies resist the taxes levied on them by the English Parliament?
4. Why has Burgoyne's defeat been classed as one of the decisive victories of the world's history?
5. Give a brief history of the invention and development of the Electric Telegraph.
6. What was the Kansas-Nebraska bill and who was its author?
7. What was the plan of operation of the Union forces in 1864?

1. Genoa, Venice, Florence. By the Mediterranean, Nile, Red Sea, and caravans across the deserts of Arabia.

2. Spain discovered and claimed the Atlantic coast from Florida to the northern coast of South America. England claimed the coast northward to the forty-fifth paralel. The Dutch pushed in a wedge, temporarily, at the Hudson river. France claimed Nova Scotia, Labrador, and the St. Lawrence valley.

3. Taxation without representation.

4. It decided France who was then hesitating as to whether or not she would render aid, encouraged the patriots, discouraged England, and marked a turning point in the Revolution.

5. Invented by Samuel F. B. Morse, the first line completed after a long struggle, in 1844. It connected Baltimore and Washington. Its success was followed by a rapid extension in lines. The Morse alphabet is still largely used, though there have been many improvements in devices.

6. A bill devised by Stephen A. Douglas, repudiating the Missouri compromise, and providing that the territories of Kansas and Nebraska should decide for themselves if they would have slavery or not.

7. To keep the confederate forces from aiding each other. Grant was to push toward Richmond; Sherman was to mow a broad swath across the South, cutting the Confederacy east and west, as the opening of the Mississippi the year before had cut it north and south.

GEOGRAPHY.

1. Why is it warmer at the equator than at the Tropic of Cancer? What are heat belts?
2. Discuss ocean currents of the Pacific Ocean.
3. State approximately the number of people to the square mile in Indiana.
4. How are icebergs formed?
5. What is the Piedmont belt?
6. Where is each of the following: Cavité, Johannesburg, Iloilo, Guam, Honolulu?
7. What do plants absorb from the atmosphere?
8. What are the sources of special school and tuition funds used to support the common schools of this State?
9. What is the source of rubber? From what countries is it obtained?
10. How does the government of the Indian Territory differ from that of the Territory of New Mexico?
11. What are folded mountains?

1. Owing to the greater average inclination of the sun's rays the Tropic of Cancer receives about 90% as much heat in a year as the equator.

2. The equatorial currents of the Pacific Ocean are driven by the trade-winds westward about 8,000 miles. At the west side of the ocean they are deflected by the continental barriers to north and south, and in middle latitudes come into the belt of prevailing westerly winds which drive the water eastward to the American coasts. There is thus a complete circuit or eddy on each side of the equator. A small part of each westward current turns toward the equator and flows back eastward in the belt of equatorial calms, forming a counter current. There is no other place for this water to go and there is nothing to hinder its going where it does.

3. Sixty.

4. Most icebergs are formed by breaking from

the end of a glacier which enters the sea. Some are formed by the piling up of sea ice.

5. The Piedmont-belt is a plateau which lies between the Atlantic coastal plain and the Appalachian mountains.

6. Cavité, near Manilla, Philippine Islands. Johannesburg, South African Republic. Iloilo, island of Pavoy, Philippines. Guam, one of the Ladrones islands. Honolulu, Oahu, Hawaiian islands.

7. Plants apsorb carbon dioxide and use it in the manufacture of food. They also absorb oxygen for purposes of respiration as animals do.

8. The special fund comes from a local tax. The tuition fund is derived partly from the income from the permanent state fund which the sale of public lands established, and partly from a tax levied to supplement this income.

9. India rubber or caoutchouc is a gum derived from the juice of various plants. The rubber of commerce comes mostly from South America.

10. New Mexico has an organized government established by congress. Indian Territory has no organized government. The Indians are regarded as the wards of the nation.

11. Folded mountains are those which have been formed by folding of the rock strata and exhibit in their structure a series of arches and troughs more or less eroded.

PHYSIOLOGY AND SCIENTIFIC TEMPERANCE.

1. (a) What is the relation of a nerve cell to a nerve fiber?
(b) Of a nerve fiber to a nerve?
2. In what two ways does the skin regulate the temperature of the body?
3. Describe the actions by which air is brought into the lungs.
4. (a) What may be absorbed from the stomach?
(b) What from the small intestines?
(c) What from the large intestines?
5. What constitutes the circulatory system?
6. Explain the fermentation of wine when exposed to the air?
7. Name four forms in which opium is most frequently used?
8. What is the effect of tobacco upon the muscles?

1. Nerve fibers seem to be branches of nerve cells. Nerves are made up of nerve fibers.

2. Some authors state as many as five ways in which the skin gives off heat. The more important are radiation and the evaporation of the perspiration.

3. By elevating the ribs and depressing the diaphragm the cavity of the chest is widened and lengthened. Air flows naturally into this enlarging cavity.

4. Water, mineral salts, peptones and maltose may be absorbed from the stomach. Peptones, maltose, saponified and emulsified fats, mineral substances, in fact all kinds of food, may be absorbed from the small intestines. In general, but little is absorbed from the large intestine. Yet any digested food except possibly emulsified fats, may be absorbed from the large intestine.

5. The circulating system consists of the heart, arteries, capillaries, veins and lymphatics.

6. The germs that cause vinous fermentation are abundant in the air.

7. Opium, morphia, laudanum and paregoric.

8. The one who uses tobacco to excess loses muscular energy, and is unable to control his muscles for fine and accurate work. Writers usually ascribe these results to the action of tobacco upon the nervous system, but it seems probable that there is some direct action upon the muscular tissue.

SCIENCE OF EDUCATION.

1. What is understood by the "institutional" conception of education, and what by the "individual" conception?
2. Explain the term "social individualism."
3. Show that these two apparently contradictory statements are not in fact contradictory: The individual exists for society. Society exists for the individual.
4. On which of the two theories referred to in question one would the history of civilization, sociology, literature, ethics and art have properly a place in the school curriculum? Justify your answer.
5. What are the objections to the extension of the common school curriculum?
6. What were the chief characteristics of the education of ancient Rome?
7. What features, if any, in the education of Rome are worthy to be preserved in our systems of training?
8. What do you consider the principal defects of Roman education?
9. What new conception of the individual human being did Christianity give to the world that has important educational bearings?
10. A recent writer on education says: "Human life is an unbroken unity, and our early years, like the infant oak, contain the elements of our future being." Show that this is an important educational conception.

1. The "Institutional" conception of education emphasized the institution and neglected the individual. It made education specific, placing the stress upon the phase of life predominant in the nation. It made the individual exist for the institutional. The "individual" conception recognizes the fact that the institutions exist for the individual. It makes the individual the determining factor in the process of education.

2. "Social individualism" is a term used to indicate the best thought of to-day in regard to the relation of individual and institutions. It makes education a life process. Institutional life in its best phase is ideal individual life. Education consists of the process through which the individual passes in becoming at one with institutional life. The institutions as will-products of the race have underlying them the virtues and principles of perfect life or character. The school is to prepare for life in the sense that it is to have the child live the principles upon which the institutions are based.

3. A proper understanding of the thought expressed in the discussion of the second question would in a sense harmonize the two expressions.

4. Upon the second perhaps more than upon the first. The place of these subjects in the school curriculum rests more securely in the thought underlying "social individualism" than in either of these.

5. The objections commonly urged are sacrifice of thoroughness in a few subjects for superficial knowledge in many; the inability of the child to comprehend and properly relate so many subjects; the inability of the teacher to present skillfully so many subjects; the tendency to depart from the practical in education. It ought to be said here that such objections come from a failure to understand the fundamental principles for constructing a course of study. A proper conception of the matter in question will show that the best educational thought while seemingly, to a superficial observer, extending the curriculum and making it more complex, is in reality, to the thinking teacher, unifying the process, narrowing the course but furnishing larger means for reaching the end desired.

6 Roman education was utilitarian. Life consisted in framing laws, declaring wars, leading armies, constructing aqueducts and roads, and colonizing the conquered peoples.

7. The things the Romans emphasized as ends might be worthy of preservation as means.

8. Utilitarianism, private schools, and class education.

9. It emphasized the Fatherhood of God, and the Brotherhood of man, and broke down class and caste distinctions. It placed stress upon what a man *is*, rather than upon what he *has*.

10. This is the modern genetic idea which pervades educational thought. Education is a process of development. The child is in germ all he can ever become. In the process both evolution and involution take place.

LITERATURE.

1. What is your favorite novel? Why?
2. Main facts in the life of some author?
3. His literary characteristics?
4. Which do you prefer to read, orations or essays? Why?
5. What narrative poem do you like best? Why?
6. Outline the story in this poem.
7. Describe a character in some play of Shakespeare's.
8. Give the main idea in some poem of Lowell's.
9. Give the main idea in some essay of Emerson's.
10. Write a paper of not less than 150 words on "A Morning Walk."

As in previous lists these questions are designed to give the applicant a chance to express his own preferences and the results of his own reading.

GRAMMAR.

What, then, are the proper encouragements of genius? I answer subsistence and respect, for these are rewards congenial to its nature. Every animal has an aliment peculiarly suited to its constitution. The heavy ox seeks nourishment from earth; the light chameleon has been supposed to exist on air; a sparer diet even than this will satisfy the man of true genius, for he makes a luxurious banquet upon empty applause.—*Goldsmith.*

1. Name the principal clauses in the above selection. The subordinate clauses.
2. Parse (a) "then," and (b) "this."
3. Analyze—"Every animal has an aliment peculiarly suited to its constitution."
4. Underscore with one line the subject and with two lines the predicate of each subordinate clause.
5. (a) Select one infinitive and one participle and tell how they are used.
(b) Give the modifiers of "sparer."
6. Select an adverb in (a) the positive degree; (b) an adjective in the comparative degree. (c) Select two adjective phrases; (d) two adverbial phrases.
7. Give the syntax (case and reason) of (a) subsistence; (b) respect; (c) rewards; (d) diet.
Give the voice and tense of "has been supposed" and "will satisfy."
8. What is the purpose of composition work?
9. Give your opinion of the main objects to be kept in view, and the method and means to be used in teaching the English language in the first four grades.
10. Write from 15 to 20 lines on *one* of the following topics, expecting that it will be criticised upon its spelling, paragraphing, grammatical construction, and sentence structure:
(a) A Visit to the County Seat.
(b) The Study of Drawing in School.
(c) Factory Life.

1. Principal, "I answer, subsistence and respect." Subordinate, "for *these* are REWARDS CONGENIAL TO ITS NATURE." Principal, "a sparer diet even will satisfy the man of true genius." Subordinate, "than *this* (is SPARE)," and "for *he* MAKES A LUXURIOUS BANQUET UPON EMPTY APPLAUSE."

2. (a) It is a form word; (b) a pronominal adjective, used as subject of the subordinate clause.

3. The subject is the words, "every animal." The predicate is the remainder of the sentence. The copula is implied in the verb, "has." The principal part of the subject is the word, "animal," modified by the word, "every," a limiting adjective modifier. The principal part of the predicate is the word, "has," modified by the expression, "an aliment—constitution," a direct objective modifier. The word, "aliment," is the principal part of the modifier and it is modified by the word, "an," a limiting adjective modifier and by the participial phrase, "peculiarly—constitution," a descriptive adjective modifier. The word, "suited," is the principal part of the phrase, modified by the word, "peculiarly," an adverbial modifier, expressing the adverbial idea of degree. It is also modified by the prepositional phrase, "to its constitution," an adverbial modifier, expressing the adverbial idea of manner. The word "constitution," is the principal part of the phrase, modified by the word, "its," a possessive modifier.

4. See answer to first.

5. (a) "to exist," principal part of direct ob-

jective modifier of the word, "supposed. "Suited," principal part of adjective modifier of the word, "aliment."

(b) "even" and the clause, "than this (is spare)."

6. (a) "peculiarly," (b) "sparer," (c) "of true genius" and "of genius." (d) "from earth" and "upon empty applause."

7. (a) objective case, direct objective modifier of the word, "answer." (b) same as "(a)." (c) nominative case, used as principal part of predicate. (d) nominative case, principal part of subject. "Has been supposed," passive voice, present perfect tense; will satisfy," active voice, future tense.

8. Power in organizing one's thought upon any topic and in expressing it in printable English.

9. The art phase of language should be prominent. Pupils should be led to talk and write much. In the lower grades, the work will be done largely in connection with their other work, reading, number, science work, etc. The teacher will keep a constant watch over the language of the pupils, both oral and written, at all times, correcting their faults and giving the correct expressions for the errors in English, which they make. The purpose is to fix right habits of speech.

READING.

(Based on general field of Reading,)

1. Is it proper to teach the pupil that he should read just as he would converse?
2. By which method will the pupil master the thought of the selection best—silent or oral reading?
3. What would be the advantages and disadvantages of substituting the daily paper for the reader?
4. Would the general result be good, as to author and reader, if all punctuation marks were omitted?
5. In what tone should the following lines be read?

"Touch not these ancient elms that bend their shade
O'er the patriots' graves, for neath their boughs
There is a solemn darkness even at noon
Suited to such as visit at the shrine
Of serious liberty. No factious voice
Called them unto the field of generous fame,
But the pure, consecrated love of home."

6. Should the pupil be urged to think of the punctuation marks while in the process of reading? Why?
7. Read this selection to the superintendent:

"And you call that fellow a poet, do you? A poet! He could never make the rhymes jingle in his doggerel. A poet! Ha! ha! ha! That's the last thing I should ever think of calling him."

1. No. Conversation is a kind of informal, building-up process. The material of reading is, as a rule, more systematic, more carefully organized. Such a direction to a class may sometimes help correct any tendency toward stiffness in reading.

2. As these terms are generally used silent reading is the more effective.

3. The only advantage would be in the fact that the newspaper contains what is of immediate interest, but this is of little worth, since what is of immediate interest may be of only transient importance. The sensationalism of the daily press, and the florid and unnatural and exaggerated style too often found there contrast strangely with the repose of the master.

4. No. Very often the same expression may have a variety of meanings and the one desired may be indicated to the reader by the use of punctuation.

5. The tone should be in keeping with the solemnity, tenderness and reverence of the idea expressed.

6. No. To do so distracts attention from the main thing under consideration, the meaning of the passage. One should no more think of the punctuation than he should think of the spelling of a word, as such, when reading.

(Based on "How to Teach Reading.")

1. In what "pitch" should the following be read?

"Antonio, I am married to a wife
Which is as dear to me as life itself;
But life itself, my wife, and all the world
Are not with me esteemed above thy life;
I would lose all, aye, sacrifice them all
Here to this devil, to deliver you."

2. What is the difference between "logical contrasts" and "emotional contrasts?"
3. What is meant by the statement that the reasons for "low pitch" or "high pitch" are psycho-physiological?
4. What is the difference between loudness and force?
5. Which is better, to detain a pupil on a few selections till he masters the expression of them, or to have him read extensively?
6. How can a pupil best be taught the expression of emotion?
7. "Group" the following:

"Of man's first disobedience, and the fruit
Of that forbidden tree whose mortal taste
Brought death into the world, and all our woe,
Sing, heavenly muse, that, on the secret top
Of Oreb, or of Sinai, didst inspire
That shepherd who first taught the chosen seed
In the beginning how the heavens and earth
Rose out of chaos." * * *

1. Beginning in rather a low key and changing to a higher one as the passage proceeds.

2. Logical contrasts are largely formal antitheses of ideas while emotional contrasts have reference to the more subtle oppositions of mood such as are found in Shylock's interview with Tubal in *The Merchant of Venice*. See chapter XIII.

3. "Nerve tension means muscular tension, and, since the muscles controlling the vocal chords are subject to the same laws as the other muscles, the greater the tension the higher the pitch," and *vice-versa*. See p. 49.

4. Loudness refers to increased volume of sound while force refers to quality of sound.

5. Either plan would be unfortunate if carried out to the extreme. Perhaps we should say that intensive work is of more importance in school as the tendency to extensive reading is likely to be the ruling one outside of school.

6. Stimulate the imagination of the child until it completely grasps the situation and it will respond with the proper emotion, and this is the first and most important step toward expressing the emotion.

ARITHMETIC.

1. What is the Grube method in number teaching? Illustrate.

2. Add 545982
606819
146608
899478
596777
865092
828459
478949
888948
667848
769949
876829
448867
732845
583656

3. A school city that has an assessed valuation of $121,526,341 must meet an annual expenditure of $722,410. Allowing that 2% of taxes levied are not collectible; what rate must be levied to meet the expenditure?

4. Should pupils learn the Metric System? If so, what devices would you employ in the instruction? Give reasons for your answer.

5. A ladder 78 feet long stands perpendicularly against a building. How far must it be pulled out at the foot that the top may be lowered 6 feet?

6. If I buy stock through a broker who charges ⅛%, how much must I invest in stock at 153, paying 9% dividends, to secure an income of $1,350.00?

7. Algebra. A boatman can row 14 miles an hour with the tide; *against* a tide two-thirds as strong he can row only 4 miles an hour. What is the velocity of the tide in each case?

1. The Grube method emphasized the importance of making elementary processes in number concrete, and studied all the combinations of a number, addition, subtraction, multiplication, division, fractions, before taking up the next number.

2. $8,620,106.

3. $722,410÷.98=737,153.06, the amount to be levied. $737,153.06÷121,526,341=.006 $\frac{737153}{121526341}$, rate of assessment.

4. Advanced pupils should learn it. The set of rules and measures that may be easily procured are of much value.

5. 78—6=72, the hypotenuse.
$\sqrt{78^2-72^2}=30$, the base.

6. $1350÷.09=$15000, par value.
Each dollar's worth costs $1.53⅛.
$15000 cost $1.53125×15000=$22968.75.

7. Let x=rate of rowing, y=rate of tide.
$x+y=14$. $x-\frac{2y}{3}=4$. Whence x=8, y=6.

This presumes the rate of rowing to be the greater. If the rate of tide is greater the second equation becomes $\frac{2y}{3}-x=4$ and the results are x=3⅓, y=10⅓.

SONNET.

One day while strolling through some fallow ground
I drew too near a quail's secluded nest;
She straightway rose, and with an air distressed
Would lamely run or fly by spells around
My feet to draw me from the sacred bound;
And thus I followed with the truth unguessed
Till she had led me far in aimless quest
Then left me there the treasure never found.
I feel the flutter of your heart, my dear,
And wise by that experience of the past,
I know the treasures of my life are near,
And I am happy they are found at last;
But never art, though practiced well, sincere,
Can move my feet that love has fettered fast.

ALONZO LEORA RICE.

EDUCATIONAL, LITERARY AND GENERAL ITEMS.

The first note of approaching commencements sounds from Chalmers, Ind. Professor Guy M. Wilson has been superintendent there during the past year.

Professor Alvin C. Payne, who has had a most successful year at Fairbanks, Ind., has been called to the superintendency at Hymera for the coming year.

The school board of Portland, Ind., has unanimously reelected Edwin F. Dyer as superintendent for another year. His work is reported as most satisfactory.

Paidology is the title of a quarterly magazine, the first number of which is to appear in July, 1900. It will be edited by Oscar Chrisman of the Kansas state normal school, and is to be the organ of a Paidological club.

The April number of THE INDIANIAN will contain the concluding paper by Gen. Carnahan on "The Battle of Chicamauga," illustrated with half-tone engravings of all the Indiana regimental monuments, forty-two in number.

The authorities at Indiana university report a great demand for information concerning the work for the spring term and summer session. The change in the work of the summer school gives promise of a decided increase in the attendance.

Indiana university was particularly fortunate in escaping a small-pox epidemic. There were three cases in Bloomington, but general vaccination and the enforcement of the board of health rules prevented the spread of the disease. There is not now a single case in Bloomington.

The university of Chicago press has reprinted a paper delivered at the Los Angeles meeting of the N. E. A. by G. W. A. Luckey, entitled *The Development of Moral Character*. It is reprinted without comment of any kind, presumably to give a wider circulation to a most excellent address.

The Bluffton (Ind.) schools are greatly pleased with the new plan of gradation introduced by Superintendent Wm. A. Wirt. It is simply a division of the school year into three parts, or the division of the eight years into twenty-four periods, making the steps between the grades short and easy.

Professors James B. Royce of New Marion, and Rudolph Acher of Osgood will conduct the seventeenth term of the Ripley county (Ind.) normal school this year, April 9 to June 1. They are both state normal school men, and will certainly conduct a school that will be of large help to the Ripley county teachers.

Superintendent J. W. Hamilton, of the Monticello (Ind.) schools, has prepared a leaflet for the use of teachers and students the purpose of which is to facilitate the use of books accessible to the teachers and students of Monticello. This is a service that may well be imitated in many places where valuable books are too much unused.

The statement in last month's EDUCATOR that Daniel Freeman of Crawfordsville, Ind., had been promoted to the position of Latin teacher in the high school was incorrect as to the position. It was science in the high school instead of Latin. Miss Moore is giving excellent satisfaction as Latin teacher, a position she accepted at the beginning of the school year.

The young women of Northwestern university are very proud of their edition of the college paper issued March 15. Editor-in-chief, department editors, and reporters were elected by the young ladies from among their number, and they proceeded to show their brothers how a college paper should be run. The issue is very attractive and is creditably written.

The plans for the reconstruction of Wylie Hall, Indiana university, provide for a three-story building, brick with stone trimming. The construction will be absolutely fire-proof. The accommodations for the departments that occupied old Wylie Hall will be much better in the new building. The building will be ready for use at the opening of the fall term.

Professor Henry Cohn of the department of German in Northwestern university, is in a critical condition by reason of a stroke of paralysis. Professor Cohn is a well-known teacher, is distinguished for his energy, and has done much to arouse interest in his favorite study. His affliction is partially attributable to overwork incident to his interest in the two flourishing German literary clubs maintained by students of the university.

The report that the conservative house of D. Appleton & Co. had gone into the hands of a receiver aroused a good deal of surprise. It appears that the recent failure of Harper and Brothers helped to reduce confidence in such a way that the Appletons were not able to make certain large loans to meet maturing obligations. The house owns a large amount of very valuable property, and little doubt is felt that the embarrassment is only temporary.

The Rochester normal university announces to the teachers of Indiana that Professor Sanford Bell of Indiana university, will be at the head of their department of pedagogy for the summer term. This announcement indicates the high standard of excellence set by the R. N. U. Their superb faculty of university trained instructors together with their excellent curriculi entitle them to take a place in the front rank among the normal schools of Indiana.

We are in receipt of a copy of the announcement of the spring term and summer session of Indiana university. It is a neat pamphlet of forty-six pages, and gives full information concerning the work that will be given from April 3 to August 24, 1900. A copy will be sent to any one on application to the registrar of the university, Bloomington, Ind. The courses in nature study by Dr. D. W. Dennis, and pedagogy and psychology by Dr. W. L. Bryan are especially attractive to teachers.

The North Central History Teachers' Association will hold its third regular meeting in Chicago on Friday and Saturday, April 13 and 14, 1900. The sessions will probably be held in Fullerton Hall in the Art Institute. The subject for discussion Friday afternoon is: How should work in civil government in schools be related to the work in history? Saturday morning's discussion will be upon the use of "sources." The secretary, Mr. Harry S. Vaile, Maywood, Ill., will be glad to furnish further information.

There is to be an exhibit of school work at the N. E. A. at Charleston this year. Teachers desiring to have their schools represented may get full information by addressing Mr. Asbury Coward, Charleston, S. C.

Professor John A. Carnagey has been re-elected superintendent of the schools at Columbus, Ind. During the ten years of his efficient administration there has been marked progress in every department of the school.

Superintendent James McGinnlss, who has been in charge of the Owensboro schools for the past nine years, signified his intention of retiring a month ago. The school board has since selected for the place McHenry Rhoades, Superintendent of the Frankfort, Ky., schools. His salary is $2,000.

The many teachers who know Professor C. W. Farr and his excellent work will sympathize with him in the loss of his wife. Mrs. Farr was born in Tipton, Ind., and educated at DePauw university. Her life, brought early to its close, is described as one of sincerity, usefulness, self sacrifice and Christian charity.

The author of "Bandanna Ballads," in the April Ladies' Home Journal, is one of the newer singers of negro folklore. She is Miss Howard Weeden, and her ballads have elicited the highest praise of Joel Chandler Harris. She illustrates her own writings with pictures that are as felicitous, faithful and convincing as her verse.

The Owensboro, Ky., city teachers were invited to attend the southern Indiana teachers association at Evansville April 5, 6 and 7. The invitation came from Superintent W. A. Hester and was gladly accepted. Thirty-six have sent on their enrollment fee and have chartered a steamboat for the trip, the school-board having wisely ordered the school closed for the time.

Circular letters are going out to every high school in the state from Mr. Frederic Austin Ogg of the history department at the state university asking for information about courses in history and the training of the teachers. The questions are pertinent and searching. It seems worth while to urge prompt and full replies because of the value which such an amount of information will have.

The northern Indiana teachers' association, held at Logansport, March 29–31, had the largest enrollment in its history. President David Starr Jordan and Hon. O. T. Corson were the instructors. A detailed report will be given of both this and the southern Indiana meeting in the May EDUCATOR. The northern association next year goes to Anderson, and Superintendent J. W. Hamilton of Monticello will be president.

The recent meeting of the northern Indiana superintendents' club at Delphi was considered very satisfactory. The visit to the Delphi schools showed a healthful and progressive spirit among both teachers and pupils. Various live topics were considered such as the adopted text-books, half-day sessions, current criticism, efficiency of teachers, and so forth. The limit of this club to twenty members seems to be an excellent feature.

During the next term of school at the academy of Northwestern university a new experiment is to be tried, in the way of furnishing reviews of common school branches for the benefit of those who desire to teach. Every year numbers of students go out from the school to teach in the public schools, and it is the intention to devote some time to the professional training of these young people. Much interest has been aroused in the study of pedagogy, and this opportunity for additional professional work will, no doubt be appreciated.

Something of an experiment in education at Northwestern university was tried a short time ago. The faculty of the academy secured a large loan collection of reprints of famous paintings, and held an art exhibition which extended over three days. The students of the academy were addressed upon the subject of art by Professor Stuart of Garrett Biblical institute, and literary and musical programs were rendered in the academy library, where the exhibition was held. Much interest in the project was manifested by the students, and it is believed that good will certainly result from this attempt to interest secondary-school pupils in the masterpieces of the world's great artists.

"Art Study Pictures" by the Art Study Company, 356 Dearborn street, Chicago, is a semi-monthly publication in portfolio form, presenting with each number an assorted group of ten reproductions from famous paintings, ancient and modern. These seem especially available for art clubs or individual culture, and pleasant to possess besides. The cover is quaint with old English lettering and decorative poster design, and just inside is a life-sketch of the artist—or general article on the artist-group—illustrated in the number. Foot-notes give references for more extended readings. Then follow the reproductions on separate leaves of strong white

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A JOURNAL FOR THE PROGRESSIVE TEACHER.

WALTER W. STORMS, Editor.

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THE INLAND EDUCATOR

A JOURNAL FOR THE PROGRESSIVE TEACHER

Edited by Walter W. Storms

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MAY, 1900.

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VOL. X. MAY, 1900. No. 4.

Substantial Aid For Cuban Teachers.

If there were any doubt about the disposition of the United States government to help promote the welfare of Cuba and her people something favorable might be said regarding the plan which Professor A. E. Frye, superintendent of the schools of Cuba hopes to carry out this summer. The United States will furnish free transportation for 2,000 Cuban teachers to attend six weeks of summer school at Harvard this year. It is believed that a fund will be raised to pay their expenses while here. President Eliot promises that Harvard will do her share. This will be a great opportunity for these native teachers and the influence upon the schools which they will teach when they return will be large. The government would do well to encourage Puerto Rico in the same way.

* * *

Why Not Have Four Spring Meetings?

If a word of prediction may be ventured, the time is near when the two associations of Indiana that are known as the northern and the southern, respectively, will become four, propagating themselves by the well known biological law of fission. That this is desirable need not be argued; for the largest available auditoriums leave overflow meetings necessary, while only a portion of those who can be seated comfortably in a transformed skating rink can hear what is said by the speakers on a distant platform. Moreover there is not a city in the state outside of Indianapolis that can be expected to have hotel accommodation for two or three thousand guests besides their usual patronage. But the multiplication of these spring meetings should be allowed to come in its own way. Better accommodations both as to hotels and convention halls are to be desired, the smaller bodies would be more easily handled, the patronage for which the various towns are so eager could be more widely distributed, many teachers who found it convenient might attend two or more of the meetings, and those who were really expected to attend could do so at a reduced traveling expense, the districts being smaller. The cause that is going to make division necessary, namely the increased attendance, is a good sign. An enrollment of 3,000 or more in a district containing only about 8,000 teachers is an excellent record. There may be some sentiment attaching itself to these respective organizations, but there should not be so much as to stand in the way of natural development. There is enthusiasm in numbers up to a certain point, but it must be counterbalanced when mere size is maintained at the expense of comfort and effective teaching for all.

* * *

Dr. E. B. Andrews Goes to Nebraska.

By accepting the chancellorship of the university of Nebraska Dr. Andrews practically severs his connection with the Chicago schools. His present term of office expires the last week in June. His physician has ordered an immediate rest, and the school board grants him a vacation during May and June with full pay. This action, together with expressions from numerous members of the board shows that, though official relations have been often strained, personal relations are cordial and have no doubt been so from the first. The fact seems to be that a majority of the Chicago school board stands for political pull. Dr. Andrews has stood openly for merit as the only right basis for promotion, The fight has been a strong one and it is quite likely that pull would have won had not the contest been brought to a close by the call to Nebraska. Some of Dr. Andrews' friends have said that he would have fared better had he used more diplomacy. If this is true it must also be said that his candor and his independence are vastly more admirable, and have done more to emancipate the schools of the

country from political rule than the most servile catering could ever have done. Professor Edwin G. Cooley, president-elect of the Chicago normal school, is prominently named as Dr. Andrews' successor.

* * *

Prizes for Essays on Hygiene.

In 1898, at the national meeting of superintendents in Chattanooga a committee of nine members with Commissioner W. T. Harris as chairman was appointed to make a careful and scientific study of the factors involved in the proper seating, lighting, and ventilating of school buildings. This committee reported at Columbus in February last year and at Los Angeles in July, with the result that a committee of six be appointed to ask an appropriation of $1,200 which could be awarded for the writing of papers in accordance with propositions to be made. The appropriation was granted at the recent Chicago meeting. The three topics, seating, lighting, heating are to be treated independently. For the best essay on each, $200 is offered; for the second best on each, $100. The essays are limited to 10,000 words. For other rules contestants may write to President A. R. Taylor, Emporia, Kansas, who is chairman of the committee. The general subject of school hygiene is of far reaching importance, and the conclusions to be reached through the proposed means will surely be of great value.

* * *

A Silver Anniversary for Quincy.

Should the question be asked Who is the most picturesque figure among American teachers to-day, not many would hesitate in answering at once, Colonel Francis W. Parker. The celebration at Quincy on April 20, recalling the day when he took charge of the schools there twenty-five years ago may have served to bring his name more prominently to view; but his whole career, from boyhood and early service in the civil war to the magnificent climax in the opening this summer of the best equipped school for teachers that the world has yet seen, abounds in experience and contests which seem more like romance than reality. Dr. Winship of the *School Journal* thinks "Manifest Destiny was never more apparent than in the case of Colonel Parker." Whether we believe in "manifest destiny" or not we shall all agree in admiring his magnificent, uncompromising struggle for an ideal, and in rejoicing with him now that his ideal becomes realization. The so-called new education which he tried to inaugurate at Quincy met the united opposition of routine school-keepers everywhere. Standing for awhile almost alone, and almost overwhelmed by opposition, he held to his principles even when his tenure of office was imperilled. Ridicule and politics were often hand in hand against him. Colonel Parker may have his critics and his enemies even to-day, but they are not the sympathetic men and women who love children and who believe that character and usefulness and service are more to be desired than the mere getting of knowledge. His detractors are not the ones who think that education should be for citizenship, that the school should be an ideal community, and that the child should, from the first, as far as he is able, be a citizen of that community. The Quincy celebration, then, justifies the aspiration and the long years of patient devotion which are already bearing an abundant harvest.

* * *

Precept and Practice.

In what important respects does the relation of teacher to the instructor or speaker at an institute or an association differ from that of the pupil to the teacher in the schoolroom? If the teacher continuously urges upon pupils the importance, the necessity, nay, even the beauty of self-control and a nice regard for the rights of others it follows that much precept makes us paragons in practice. *Nicht wahr?* When we see persons at an educational meeting carry on an animated conversation throughout an address or lecture it must be, then, that they are merely visitors. If teachers should do so others would conclude that they had two standards of conduct, one for pupils and another for themselves, one for the schoolroom, another for the lecture room, one for precept and another for practice. Then, too, the precept of Dr. Dewey which we are so fond of quoting—"Education is life"—loses most of its meaning. But it is not quite so easy to explain another phenomenon—the noisy breaking loose of a convention at the close of a session with utter disregard of the presiding officer, one of whose duties, according to all civilized parliamentary usage, is to declare the session adjourned. Do we as teachers dismiss school that way? Would we as teachers tolerate such disorder? If not, are there two standards of order in dismission? Finally, is there not a measure of courtesy due to the unfortunate last person on the program? How often it happens that those who have the more favored places on the program are allowed to talk far beyond their allotted time, sometimes until the audience is weary, while the last speaker sees both his time and his audience dwindle away. To one who has prepared his ad-

dress by the expenditure of much time and study this is disheartening to say the least. We would urge three things. (1) Avoid the making of long programs. Too little is vastly better than too much. (2) Adhere rigidly to the time schedule. One of the refreshing things at the last Chicago meeting of superintendents was the firm way in which President Downing forbade trespassing. (3) When the closing number comes and you are tempted to "cut," put yourself in the speaker's place and do as you would be done by. The office of censor is usually an unpleasant one. Perhaps it is right that it should be so, especially when the office is voluntarily assumed. It has seemed, however, judging from recent observations, that at least this much ought to be said. If the whole thing is only a man of straw, so much better for the teachers.

* * *

A College Degree in Two Years. It is a well-known fact that many boys and girls are kept from pursuing a college course by the time and expense at present involved. It is fair to assume that if something definite could be accomplished in half the time there would be many more to avail themselves of it. A few of the American colleges have felt that there should be a shortening of the course. In his last report President Eliot says that forty per cent. of the graduating class will, by their own voluntary efforts, finish the prescribed four-year course in three years. Indeed, President Eliot has for some time advocated a reduction of the period for earning the A. B. degree to three years. The plan which President W. R. Harper reports as having been adopted by the university of Chicago will be of great and immediate interest to every high school and every preparatory school from which Chicago is accessible. The proposition is to give the degree of Associate in Arts, Philosophy, or Science to all who satisfactorily complete the work of the freshman and sophomore years. It does not anticipate the abolishing of the usual degrees of Bachelor, Master, Doctor, but simply recognizes the completion of a distinct course, related to the course for the Bachelor's degree as the latter is to the course for the doctorate. Dr. Harper thinks the plan will accomplish five things: (1) Many students will find it convenient to give up college work at the end of the sophomore year; (2) many students who would not otherwise do so, will undertake at least two years of college work; (3) the professional schools will be able to raise their standards for admission, and in any case many who desire a professional education will take the first two years of the college work; (4) many academies and high schools will be encouraged to develop higher work; (5) many colleges which have not the means to do the work of the junior and senior years will be satisfied under this arrangement to do the lower work.

* * *

Memorial Day. Several things combine to make the annual exercises of decorating the graves of soldiers interesting to schools and teachers. It is one of the fine occasions to teach a genuine patriotic love of country. Scarcely another single agency did so much to abolish sectional bitterness as the custom of meeting once a year on battlefield, or in the cemeteries, to honor alike the blue and the gray. Then there is the active part which children may take in most of the exercises. To have a place in the procession, marching as the soldiers marched, to join hands with the few old comrades that are left, to carry the flag, to sing in the open air with thousands of others "My Country 'Tis of Thee" stirs deeper and nobler feelings in the young heart than merely to stand by the wayside and see the pageant go by. It seems worth while to suggest that wherever available the schools and the G. A. R. posts unite in commemorating the day. Let the martial spirit be subdued, and in its place "a humble and a contrite heart" recalling the sacrifice and the blessings we enjoy because the sacrifice was made. Special attention is called to our program on another page.

* * *

The Commencement Oration.

A few days ago a teacher, west of the Mississippi river, wrote to ask us for the address of a firm that could furnish literature for commencement orations. Happily we did not have the required information at hand, but unhappily a "confidential" circular from one of these vicious concerns came in a day or two later, to suggest that there is still a demand for ready-made commencement stuff, and that those who are willing to supply it are still abroad in the land.

Whom shall we blame most, the student who deceives himself and friends by working off as his own a ten-dollar oration on commencement day, or the concern that creates the temptation to this kind of barter, or the system that has set up an unnatural standard for the style and quality of graduating essays? It is right, perhaps, that there should be special exercises to celebrate for a

class its completion of a course of study. If the preparation and delivery of an essay or oration is deemed an honor which gratifies the graduate and his admiring friends, well and good; provided, always, that the effort is an honest one. The best incentive to honesty is to encourage naturalness. The teacher who advises the selection of abstract or far-fetched subjects can not be held blameless if the student is practically driven to plagiarism of all sorts. In our judgment a graduating essay should be the best example the student can furnish of the kind of work he has been doing.

The beautiful theory, perennially paraded, that the way to the White House or to a governor's palace is clear and open to any boy in the land may have an element of truth, but it really works out in so few cases that a far better theory is that which points out how men and women may be useful and happy along the humble ways where most of us must walk. The boy or girl who has made a careful study of some phase of the work done at school, and who records in the best manner possible the results of such study may not soar so high as the one who indulges in the airy vision, but will surely be on firmer ground when the show has passed and the more practical business of making a living has actually commenced.

* * *

Newspapers Criticise Dr. Jordan

The local papers at Logansport and also some of the state papers published at Indianapolis have offered some adverse and caustic criticisms upon the addresses which Dr. David Starr Jordan gave before the northern Indiana teachers' association and before other educational bodies during his recent visit to Indiana. One of the Logansport dailies expressed the opinion that Dr. Jordan must be a demagogue rather than a pedagogue, and reasoned that his anti-expansion theory if logically carried out would have prevented his advancement to the high position which he now holds as president of Leland Stanford University. Now THE EDUCATOR is not and should not be partisan. It is neither its function nor its wish to discuss politics from a partisan point of view. As a matter of fact the editor happens to hold personal opinions that do not accord with those held and expressed by Dr. Jordan about the policy of the United States government in the Philippines.

Yet we wish to protest against the criticisms as made. Every teacher who reads current literature knew months ago what Dr. Jordan's views were. The executive committee who invited him to take a place on the program at Logansport also knew. No sane and thoughtful person could expect that he would deliver a series of five or six addresses and not give expression to his convictions on the great questions of the day. Indeed, if it had been known that he was to "talk to the galleries," that his addresses were to consist of platitudes and commonplace truths which we all know, who would have cared to hear him? Do the critics think that teachers should be kept in ignorance of what eminent men think about public questions, or that because a man of Dr. Jordan's ability differs from his critics that he is therefore necessarily wrong?

It seems to THE EDUCATOR peculiarly important that teachers be thoroughly informed upon the great movements in current history. To this end we need to hear the arguments and views of both sides unless we wish to adopt views that are either second-hand or distorted. No! Give us great teachers who have convictions and who express them freely. Let teachers know what other teachers really believe whether opinions agree or differ. Our vaunted search after truth demands at least this much; and the day is gone, or is fast going, when the school teacher may not hold and express convictions upon all subjects as freely as that other teacher who lives and thrives by virtue of a free and independent press.

I praise the Frenchman, his remark was shrewd:
How sweet, how passing sweet is solitude!
But grant me still a friend in my retreat,
Whom I may whisper, Solitude is sweet.

—*Cowper.*

THE CHILD AND THE SCHOOL.

VIEWS OF REPRESENTATIVE MEN.—IV.

EDUCATE FOR CITIZENSHIP.

By WM. H. WILEY.

THE teacher needs to keep constantly in mind that the work must begin at the beginning. Our province is not to be confined to a certain grade in the course of study, but to work forward from the very point in the life and progress of the child where we find him in ignorance, and groping about in search of truth. Our work extends to, and includes, the dullest and most unpromising intellect as well as that of the genius; and the best reward may come at last in the sensible and liberal treatment of the former class. It is easier and more pleasant to develop the bright pupil, of course, but a broad comprehension of the needs of the ordinary one will insure inspiration of service in his behalf.



WM. H. WILEY.
Superintendent Terre Haute Schools.

Let it be fully understood, then, and accepted in good faith, that the teacher is properly charged with the ever present duty of adjusting the work to harmonize with the best phases of community life. Our civilization having advanced to the position of the necessity of saving and developing every life, it becomes our opportunity to insure this salvation for the humblest child and in the best way possible. The "survival of the fittest" is giving place to the doctrine of the survival of the weakest. The sanctity of life with its rights and possibilities is in process of universal recognition and acceptance. The teacher dares never to forget that law is the very basis and bond of union of human society; and yet it is not so much of doctrine as of life that should be exhibited to the pupils.

All of the successful plans of education in the past have been based upon the nature of the child, and the peculiarities of his environment; and the systems of the future must likewise take cognizance of these predominating influences. In so far as the child has been well born, and is favorably surrounded, our work is simplified. And in so far as he lacks these things, we are called upon to be more thoughtful, more discreet, and more tactful in furnishing a better example in ourselves and in harmonizing him with nature.

Our opportunity, then, is extended from the most unpromising child in the hovel, with the birthmark of filth and poverty upon him, to the proud heir of wealth and culture. And after all both may come to an honorable manhood under the skillful guidance and consistent life of the wise teacher. The world of childhood must be saved through sympathy and encouragement and brotherly kindness and love.

NATURE STUDY.

TO THE CHILDREN OF INDIANA.

By D. W. DENNIS.

ARE you glad of the coming of songbirds about your homes? Would you like to have more of them come? If you will get acquainted with them, find out what they like to eat, where they most like to nest and live, what they need to build their nests of, if you will find out their enemies and protect them intelligently from these,—in short, if you will think their needs over and help them to provide these, and if you will always treat them kindly they will come in larger and larger numbers every year. If you were a bird would you go where there are no berries, no crumbs, no seeds, or where those you especially like could not be had? Would you go to see a child who never set a vessel of water out for you to drink from, when the little streams were all dried up for long distances? Suppose you liked to build your nest in the grass or out of the old dried grass, you would not go where lawn mowers or anything else robbed you of all of it. Suppose you wanted wool or cotton or hemp, would you not go where children had been thoughtful enough to leave these around where you could easily find them? Suppose you were a "barn martin" and needed mud out of which to build your nest and a projecting eave of some building under which to put it (the rain would soften your mud dwelling), you would go, would you not, where these necessaries could be had. When I was just your age I lived in the country at the foot of a hill; this hill and the table-land that stretched away from its summit were covered with forests for a distance of two miles from my home. There was a spring close by the house, the branch from which flowed past the barn, and hundreds of "barn martins" nested there every summer; I used to watch them ply their masonry, hours and hours, shaping their curious bottle-like nests to corners and angles and to one another until there was no more room for a nest; they flew round and round above the barn playing bird games, or in "the wild joy of living," in such numbers as to darken the whole eastern sky; the trees on the hill above the house have been cut down, the spring is dry and the martins are gone; it does not seem like home to me when I go back there now.

A few feet from the kitchen door where I now live stands a large beech tree, which, until three years ago, when it was blown off in a storm, had a dead top in which woodpeckers lived; they would whet their bills or practice them (I was never quite sure which) on the slate roof and guttering at dawn, so that every one about the house knew that we had such neighbors; joy that a new day has come is no bad sort of contagion; their brilliant dress, their graceful billowy flight, and the democratic equality practiced by them in their domestic relations made their presence desirable. The female works at digging out the nest until she thinks it time to rest, when she sounds a cheerful "time's up," and the male hurries from his fun-making and takes her place while she enjoys twenty-five minutes for refreshments; after which her faithful spouse reminds her that duty calls; working thus by turns they dig out a cavity in the tree just large enough at the entrance to let them in but so small as to exclude the larger birds of prey; once in they widen it out into a spacious chamber for the accommodation of their somewhat numerous family; since the top blew from the tree the woodpecker with his good cheer and fair play has gone where his kind of housekeeping is possible.

Some birds nest in bushes,—thickets; can you name any? If you wanted these for neighbors you ought to let a thicket grow somewhere on the premises. In how many kinds of places did you ever find a nest of a bird you should like to have for a neighbor? Could you not provide some of these near your own home? How many kinds of berries did you ever see a bird eating? Could you not have or find near your home or school or both a raspberry-blackberry-elderberry-pokeberry-euonymus-blackhaw-dogwood-hackberry, etc., thicket? Could not your school keep a record of all birds that nest or visit in the neighborhood, together with what they eat, where they nest, what they use for their nests, when they first arrive in the spring, and how long they stay? Some of them will go on north in a few days after their spring arrival and not be seen any more until they come back in

the fall on their way to the south where they will winter; others will nest with you and stay all summer and then go south for the winter; still others will come from the north in the fall and stay over winter and go back north again in the spring, while a few will be with you winter and summer alike; if you will send to Mr. A. W. Butler, secretary of the board of charities he will send you blanks on which to keep this information. In this way you can very pleasantly interest yourselves in the travels of birds. Have you not seen flocks of wild geese flying in long lines forming a V to the north? Two such flocks at least have flown over my home during March, this year; as winter approaches you will see them flying in similar lines to the south. Where do these birds winter? Have you read

"He who from zone to zone
Guides through the boundless sky thy solitary flight,
In the long way that I must lead alone
Will guide my steps aright."

This is only one impressive case of what we call bird migration; many birds pass thus unnoticed, because they come and stay a few days and then pass on, and others come and take their places, and careless observers do not notice that anything is taking place; when you first have a chance to read this letter the spring migration season will be nearly over, but you can notice it in the fall. The birds furnish us something of interest always. They are mating and nesting now, and this will interest us all summer long.

If you will watch the comings and goings of birds for several years you will find that it works differently one year from what it does another, and it will become a pleasure to find out why; the chief reasons will be that the winter is colder or warmer than common, or you may have provided a comfortable home and plenty of food so that some bird will not need to go south, or coming to you from the north will tarry with you instead of going further; watch the kingfisher and see if he does not stay with you until the streams freeze over so that he can no longer get food.

Birds know their friends; they are afraid of us because for many years we have stoned and killed them; we can win them again by kindness. Burns sung, when his mouse ran from him,

"I'm truly sorry man's dominion
Has broken Nature's social union,
And justifies the ill opinion,
That makes thee startle
At me, thy poor earth-born companion
And fellow mortal."

When Captain Cook first went to the South Sea islands he met birds that had never seen men and they welcomed him with music and banners to their shores; I am sorry to have to relate that they found men undesirable fellows, and now they run whenever they see any of us coming. We ought to behave differently toward the beautiful, useful birds; if you can get hold of a young robin or bluebird or cedar bird you can raise it for a pet if you will give it the freedom of the house at first and later the freedom of the yard and neighborhood; you will have to know just what it likes for food, will have to give it time to learn your good intentions; it will soon fly down from the trees and eat from your hand; how delightful to know that the bird is yours and yet that it is free to fly wherever it will; it returns to you because it loves you, instead of remaining because it must,—in a cage; and besides how much more beautiful the bird is on the wing; it flies in ideal curves and displays all its charms of color. If you want to acquaint yourselves with the lives and habits of your home birds, a little booklet by Professor Hodge of Clark university will help you greatly; you can get it for ten cents of O. B. Wood of Worcester, Mass.

If a bird has any peculiar habit as the hang-bird in building its nest so that it will shut up when the bird is on, the quail in hopping off from its nest or brood as if lame, or the meadowlark and quail in entering the nest by a trap door from the side sometimes, the yellow-breasted chat in making its voice seem to come from a distant bush where its nest is not, the cowbird in laying its eggs in the nest of another bird, the English sparrow in nesting in a crevice the entrance to which is very small, or the fly-catcher in ornamenting its nest with a snakeskin, you will be richly paid if you try to find out why it behaves as it does; often the key to its action will be protection from enemies or gathering its food. Birds are colored very differently and some of them differently at different seasons of the year; in many instances the male and female are not the same color; do you know that the red bird, the redwinged blackbird, and the rose-breasted grosbeak are all gayly clad

while their wives' apparel is correspondingly plain?

" Robert-of-Lincoln is gaily dressed,
Wearing a bright black wedding coat;
White are his shoulders and white his crest
Hear him call in his merry note.

" Robert-of-Lincoln's quaker wife,
Pretty and quiet with plain brown wings,
Passing at home a patient life,
Broods in the grass while her husband sings:
Nice good wife that never goes out,
Keeping house while I frolic about."

You have often seen

" Mr. Bluejay full of sass,
In them base ball clothes of his,
Sportin' round the orchard jes
Like he owned the premises."

Mrs. Bluejay dresses for the world like her husband, and the chances are about even that it was she Riley saw. Mrs. Meadowlark and Mrs. Redhead are both very much like their husbands; male and female are alike also among hawks generally, owls, crows and buzzards; you should try to find out the reason for these and similar observations which you may make; see if this suggestion will help you; the female must sit on the nest; she ought to be colored like her surroundings, so as not to be easily seen, unless like the hawk she is master of her nest, or like the woodpecker her nest protects her, or like the oriole her nest conceals her; her husband should be alike inconspicuous if, like the meadowlark, he sits on the nest part of the time.

The birds will tell you much if you will get acquainted with them. Nawadaha had no books from which to learn and yet he was wise; Longfellow says he got his lessons

"In the birds' nests of the forest,
In the lodges of the beaver,
In the hoofprints of the bison,
In the eyry of the eagle;

"All the wild fowl sang them to him,
In the moorlands and the fenlands,
In the melancholy marshes."

Birds are more than artists and teachers, more than friends to the friendly, more than "bits of sunshine dowered with a voice"—close by the barn, the eaves of which housed those hundreds of martins, the Bellflower tree of my boyhood grew; we gathered thirty bushels of apples a year from it; every apple was sound; the toll we paid in the way of red-junes and cherries to the woodpeckers was small pay for the services of the birds; to-day there are ten hungry worms for every apple in our old orchard.

EARLHAM COLLEGE.

THE ELIZABETHAN PLAY-HOUSE.

By HENRY THEW STEPHENSON.

AS early as the time of Henry VII, companies of players constituted a part of the households of the great noblemen of England. The players were attached to the musical part of the establishment and presented the interludes and morality plays which were the forerunners of the Elizabethan drama. When the service of the players was not needed by the master, they were allowed to wander about the country at will, performing on the village greens or in the tavern yards of larger towns. On such journeys the players went by the name of Lord So and So's servants; and, as was natural, it was not long before the suburban districts were overrun with bands of vagabonds and rogues who, by calling themselves his servants, claimed the protection of some nobleman who had perhaps never heard of them.

To put an end to this practice, a law was passed early in the reign of Elizabeth, which required every actor to procure a license. The power to grant these licenses was given to certain noblemen, to the mayors of towns, to the Lord-Lieutenants of certain counties, and to two justices of the peace resident in the neighborhood where the applicant resided. This law, which inflicted the penalties for vagabonds upon all unlicensed actors for a while put an end to the abuse of patronage.

This restriction of the actors occurred just at that time in the reign of Elizabeth when the importation of foreign ideas, and prosperity at home combined to develop the

English nation with unparalleled rapidity. So far as literature is concerned, this remarkable development focused in the drama. No law was able to stop it. So, after the temporary check produced by requiring all actors to obtain a license, we find that the increased number of players provoked still further opposition.

During the years just previous to 1575 the London players produced their plays in the court-yards of city taverns. The English tavern of those days contained a central quadrangular court-yard, entered through a door at one end. About this court were galleries, one above the other, at the level of each story. When a play was to be performed, the actors would build a temporary platform upon trestles at the end of the court and beneath the floor of the lowest gallery. From this floor they would hang drapery so as to convert the back part of the platform and court into a dressing room. The spectators of the play stood about in the court-yard, or sat upon stools placed in the galleries.

Out of this manner of performing plays grew the further opposition to the actors. Puritanism had already taken root in England. The men who later put a stop to bear-baiting, not because it gave pain to the bear, but because it gave pleasure to the beholder, could not abide the growing interest that the nation took in the stage. To them the drama was an abomination and a snare. Great was the lamentation of the Puritans concerning the brawls, the licentious conduct, the gambling, and numerous other evils that possessed the audiences which collected about these inn-yard scaffolds. But the Puritans were not yet masters of England. To entrench their position they coupled morality with expediency. They enlarged on the danger of spreading the plague which would result from such frequent gatherings of people. This was a real danger. The corporation of London took up the cry. For a while the agitation was bitter. On one side stood the queen, the noblemen, the actors; on the other, the Puritans and the city authorities. The contest ended in a compromise. The companies of actors were not disbanded, but they were compelled to give their performances outside the jurisdiction of the Lord Mayor; that is, the limits of the city proper. They were prohibited from playing on Sunday, on holy days, and in Lent; but this part of the law was constantly violated. Furthermore, the plays must receive the approval of the queen's Master of the Revels before they could be put upon the stage.

A year or two later—December 24, 1578—an order from the Privi-Council limited the number of companies to six; namely, (1) The Children of the Royal Chapel; (2) The Children of St. Paul's; (3) The Servants of the Lord Chamberlain; (4) Of the Earl of Warwick; (5) Of the Earl of Leicester; (6) Of the Earl of Essex. From this time on, the nobleman who figured as the patron of a company did little more than attend to the procuring of licenses for the members of his company. The company derived certain prestige from his name, and frequently acted privately in his mansion, for which service, however, they were paid extra. In later times there were other companies, the most famous of which was the King's players, as Shakespeare's company was called after the accession of James.

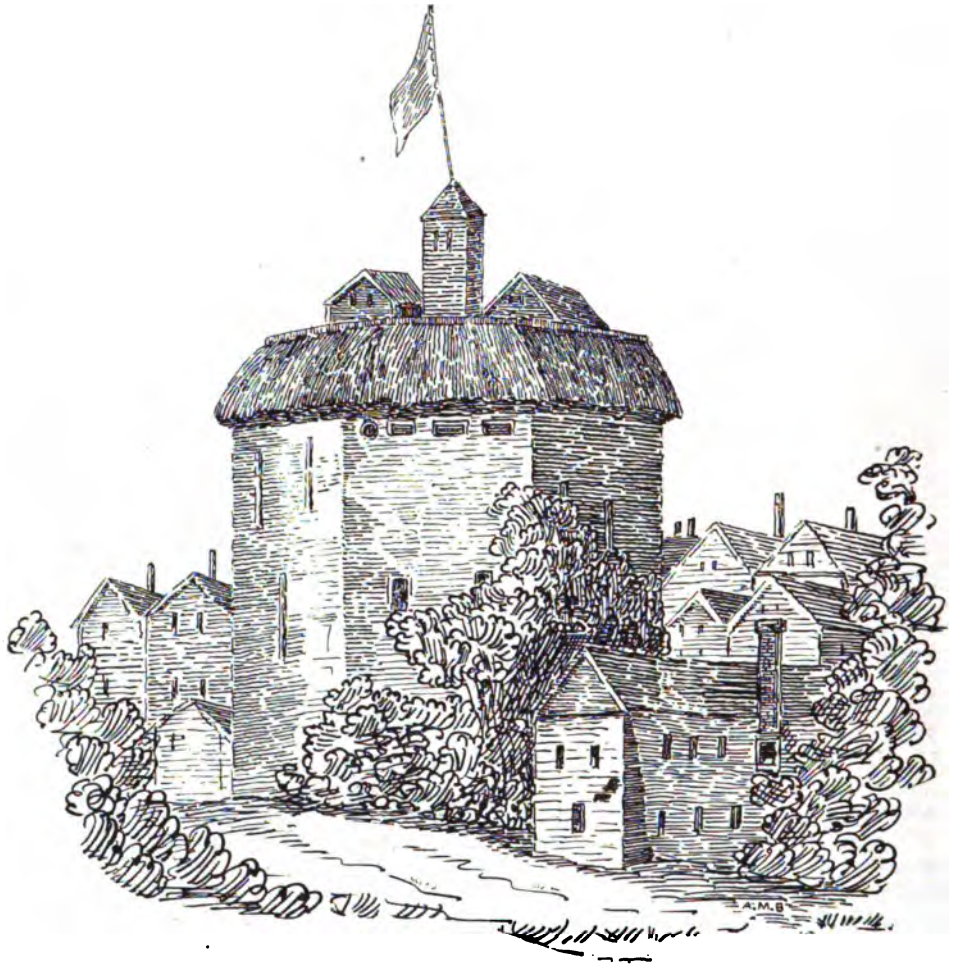
The contest between the city and the players resulted in the establishment of permanent theatres on the out-skirts of London. The first to be built was The Theatre (1576); The Curtain (so called from the plot of ground on which it was built) followed about a year later. These two were north of the city in a district called Shoreditch. The Rose was opened in Bankside (the south bank of the river) in 1592; The Swan, near it, in 1593. In 1599 The Theatre was torn down, and the material used to build Shakespeare's play-house, The Globe, also in Bankside. North of the Thames was The Blackfriars, opened in 1596. In later years Shakespeare also possessed an interest in this theatre. Other theatres were soon established, but those already named are the most notable. The following description applies to them all rather than any particular one.

The Thames river was then the southern boundary of the city. Though there was but one bridge across the river, the numerous ferryboats and private barges prevented it from being much of a barrier between the city and Bankside. The neighborhood of St. Paul's Cathedral was the center of the social activity in the city. There appointments were made, bargains struck, and duels arranged. There, too, were many of the book-stalls where the quarto editions of Shakespeare's plays were sold for sixpence. Play-bills to advertise a play were frequently

posted in the book-shops. The bills were printed red for tragedies, black for comedies. If a person wanted to know whether a play was about to be performed, he had only to walk to the river bank. A glance across the river to the Surrey side revealed the theatres. A flag flying from a little tower on the play-house indicated that a play would be performed that afternoon. When there was no play this flag was taken down.

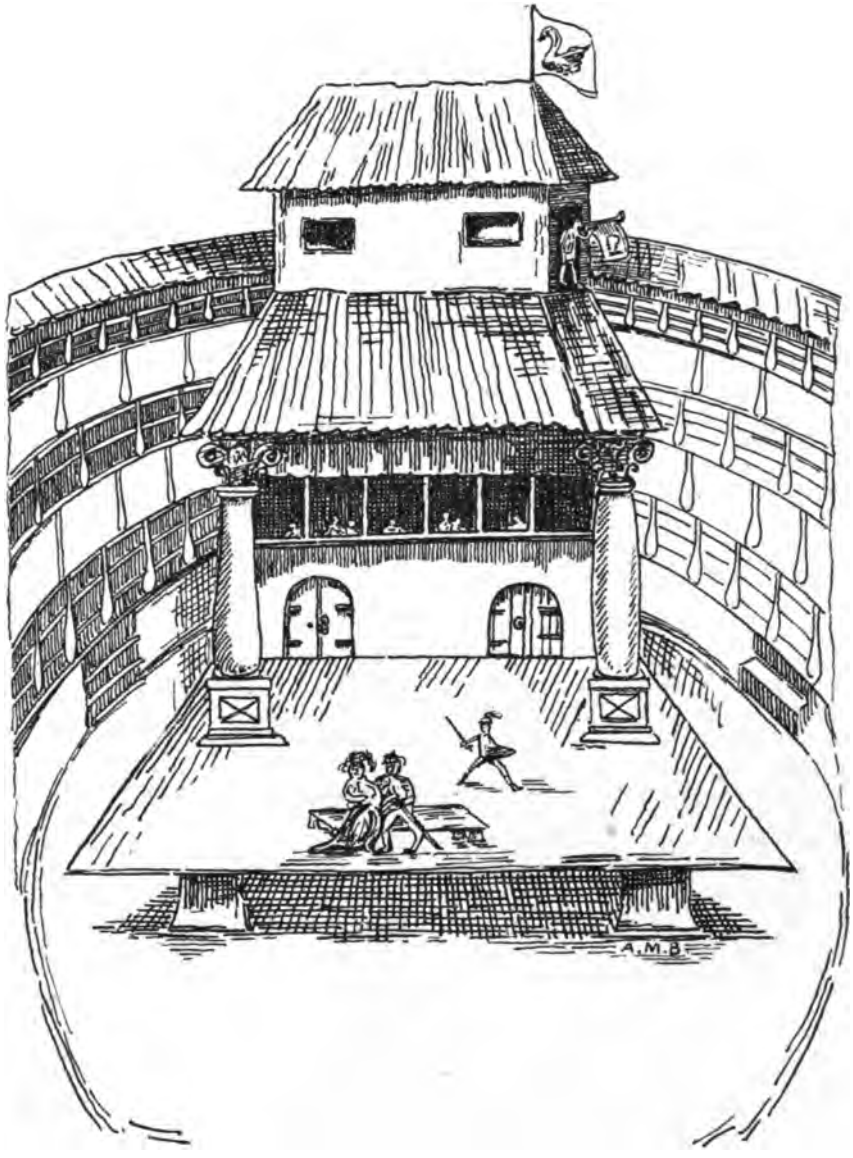
If the theatre-goer had plenty of time, he might ride round by London bridge; but, if he were in haste, he would hail a ferryman and desire to be set down at Bankside. The Globe was owned by Shakespeare's company and was near the Falcon Inn where Shakespeare, Jonson and other dramatists often gathered after a play. Play-goers who crossed by the bridge put up their horses at the Falcon; it was a great place of resort for all classes on play days.

The play-house from the outside looked like a large, squatty tower, with what appeared to be a half-finished thatch-roof, and a smaller tower or room rising one story higher than the rest. This tower carried the signal flag already spoken of. Admission varied with the occasion from a penny to a sixpence. (Money was then worth six or eight times its present value. Figures given here should be multiplied accordingly.)



Once through the doorway, the spectator found himself in a large circular enclosure, open to the stage. The theatres were sometimes circular or square on the outside, but more frequently hexagonal. The interior, however, was invariably circular. The floor

was bare clay and contained no seats. About the wall were three or more galleries, one above another. They were divided into boxes or "rooms" as they were called. Admission to a "room" was extra and paid in-



side the theatre. An attendant who kept the key let the spectator into the room and locked him in till the play was over or the occupant called to be let out. The lowest gallery was about three feet above the central earth floor which was named the "yard" in public theatres and the "pit" in private theatres. Here stood those persons who had paid only the general admission fee at the outer door.

These theaters were not so large as ours. The Curtain was about seventy-five feet in diameter and could hold 700 people. The Swan held 3,000 and the Globe was probably as large.

The people who occupied the yard were called "groundlings." They were the commoner sort of tradesmen, apprentices, apple-sellers, loose women, pickpockets, and the

like. The better sort of quietly disposed people sat in the rooms; the gallants sat upon the stage itself. Respectable women sometimes accompanied their husbands to the rooms; on such occasions, however, the women always wore masks.

The stage, which projected out into the circular area of the pit, was square and occupied about one-fourth the area of the ground space. The stage was merely a platform upon trestles three feet high, and open to the audience in front and from each side. At the rear of the stage were two doors through which the actors came and went. The stage, however, was not wholly given up to the actors. The young gallants were allowed to sit on either side upon low three-legged stools called "tripods" which could be rented for sixpence the afternoon. These stage seats were the most expensive and aristocratic in the house. With a sixpence to pay at the outer door, another sixpence for a tripod, and still another fee for permission to sit on the stage—an afternoon at the theatre was frequently an expensive luxury. The diaries of the time tell us that a good seat on a state occasion cost half a crown; that is, four or five dollars in our money.

To return, however, to the description of the theatre; it was, as I said, circular on the inside with tiers of galleries. These galleries extended like a horse-shoe completely round the theatre to the outer edges of the back part of the stage. The space directly behind the stage and between the ends of the galleries was occupied by a three-story structure.

The first story was the dressing-room. The doors at the rear of the stage opened directly into this room. The second story was a room open to the audience, called the stage-balcony. It could be entered from the dressing-room and also from the stage. It was used for all parts of the play distinctly separated from what was happening on the stage proper. In the famous balcony scene in *Romeo and Juliet*, Romeo stood on the stage, and Juliet in the stage-balcony. The play before the king in *Hamlet* was acted in the stage-balcony, while Claudius, Hamlet, Ophelia, and the rest were on the stage proper. In the chronicle-histories the defenders of a city appeared in the stage-balcony and the besiegers on the stage.

The third story of this rear structure was the tower that projected above the surrounding walls of the theatre. It contained a little room for the buglers, and its roof bore the flag that was the sign of a performance.

The stage had one other permanent accessory. From above the stage-balcony a canopy projected forward far enough to cover a little more than one-third of the stage. The pit, you will remember, was open to the sky. The apparently unfinished roof of thatch protected only the upper circle of rooms. This stage-roof was to protect the players when it rained. It was called the "heaven" and was painted blue.

It was so dangerous to walk in London at night that plays were given in the day-time. The performance usually began at three o'clock in the afternoon and lasted two or three hours. Shortly before the play was to begin a bugler blew his trumpet. This was to call in the people who lingered outside or at the Falcon. At short intervals the bugle-call was repeated a second, and a third time. Then the play was ready to begin. The prologue, generally the author of the play, entered first. He wore a black velvet cloak, and frequently a garland of bay leaves. The superstitious Elizabethans believed that bay leaves were a sure protection against thunder and lightning. Perhaps it was by design that the prologue wore this symbolic ornament; for the author of an unsatisfactory play was often the object of boisterous discontent from the pit.

When the prologue had finished his speech, which generally contained an apology for the poverty of stage effects, and a forecast of the whole play or, at least, the first act, he retired and the play began. If it was *Twelfth Night*, a placard was hung out just under one corner of the heaven. This sign bore the inscription in black letters, "This is Duke Orsino's palace." If the play was *Macbeth*, the stage would be hung with black drapery, and the signboard would read in red letters, "A desert place." This was all the scenery the Elizabethans had, except a few properties such as tables, chairs, beds, boxes, etc. (The lack of scenery on the public stage should not be confused with the magnificent and costly scenery that accompanied the private presentation of masques at the court of King James I.)

Returning to *Twelfth Night;* the duke, the musicians, etc., would follow the signboard. Valentine would soon arrive, and, a few lines before the end of the scene, the characters would begin to depart through the doors into the tiring-room. When the duke

leaves, the stage is cleared. The signboard is taken down and a new one hung up bearing "The sea-coast," and Viola appears.

All this seems very primitive; and, indeed, it is. But Shakespeare's audience was an imaginative set of persons whose fancy was often helped considerably by the masterly bits of description contained in the text. That couplet in *Hamlet:*

"But, look; the morn in russet mantle clad,
Walks o'er the dew of yon high eastward hill;"

is worth a score of stage sunrises.

Though there was in use almost no scenery, the actors were gorgeously dressed; but costume, as we understand the word, was unknown. Cæsar appeared first in an Elizabethan doublet, and later in armor perfectly familiar to Shakespeare's audience. The representation of horses was naive. Macbeth and Banquo rode across the heath upon their legs. Their horses were made of basket work; the head and fore legs stuck out in front; the back legs and tail dangled behind. It was for convenience that Banquo and Fleance sent their horses round, while they took the short cut across the stage to be killed.

There was an intermission between acts during which the orchestra played in the stage-balcony; or, if that was full of distinguished visitors, such as the queen and her attendants, the band came down into the pit and played by the side of the stage.

When the play was over, the actors knelt and recited a prayer for the queen; and, after that, the clown sang a song and danced a jig in order to put the audience in a pleasant frame of mind. This was the invariable ending of a play, whether comedy or tragedy. The song at the end of *Twelfth Night* is an example of such a jig.

Both public and private theatres have been mentioned above; they differed only in minor details. The private theatres were considered a little more select; the price of admission was a little higher; they were smaller and covered, which necessitated torches during a performance; and the pit of private theatres was usually furnished with rude benches. In other respects, the description above applies to both public and private theatres during Shakespeare's time.

Such was the outward aspect. To complete the view we must take into consideration the kind of people who composed the audience. That was a cruel, boisterous, half-savage age. The people were superstitious; they believed in witchcraft; many of the sports both of boys and men were cruel to a degrée we have no sympathy with. The laws were no less cruel. Branding on the face, slitting the nose, clipping the ears, even hanging, were penalties inflicted for petty crimes. Men wore swords and were accustomed to take the law into their own hands. From such a people we must expect noisy behavior in the play-house, though they were, in many respects, much more appreciative than we are.

The people in the rooms were generally well enough inclined. The characteristic scenes happened on the stage and in the pit. The latter, having no seats, tempted people to move about during the performance. Doubtless a person bent on crossing the pit used his elbows freely and trod on people's toes. If the audience was in a good humor this would provoke a general laugh; but likely as not there would be angry words, blows, sometimes a general row.

During the play, venders of apples, cakes, ale, tobacco, etc., hawked their goods about the pit. Sometimes a deeply tragic part was interrupted by the cry, "Pickpocket! Caught!" The play would be stopped while the luckless cut-purse was hustled forward and bound to one of the pillars that supported the stage heaven. Throughout the rest of the play he was the butt of all sorts of jokes, the mark for apple-cores and paper-wads.

The gentlemen on the stage were little better. It was thought a clever trick to come in late enough to interrupt the prologue with a lot of noise in placing one's tripod. We are told that sometimes the prologue was sent sprawling by a blow behind the knees. Once in their seats, the gallants did not scruple to bandy words with people in the pit, flirt with women in the stalls, or interrupt the players during their speech. We are told that these persons on the stage sometimes crowded so close upon the stage that the players came forward and appealed to the audience whether they should not be allowed more room to act in. If the play was not liked, the actors were hooted or pelted off the stage.

But the Elizabethan audience was not all bad. Their rudeness was the good natured rudeness of the age, not malice. And they knew a good play when they saw it. Many a poor comedy that satisfies the popular taste

of to-day would never have got safely through a first night three hundred years ago. This fact is largely responsible for the excellence of the Elizabethan drama. After all, there was manifested in the audience of that day the genuine spirit of true sport, of every fellow for himself, and give the devil his due, that has always characterized the English, whether of the time of the Armada or of Waterloo.

(The illustrations are copied from contemporary prints by Mr. A. M. Brooks.)

THE TEACHER.

By ARTHUR S. HATHAWAY.

IT is with some hesitancy that I undertake the discussion of this topic of my own profession. There is a natural tendency to exalt the importance of one's own calling, and I feel that I shall, in spite of a desire not to magnify unduly, say many things that the sober outsider might regard as exaggerated Let me at least anticipate and disarm all criticism of this character by expounding the reasons that render exaltation permissible.

It is the apostle Paul who says, "I magnify mine office." The tendency which is thus enjoined upon each, as by divine command, to magnify and exalt his office, constitutes the incentive of progress in the human race. Through the enthusiasm of the individual in his chosen work, mankind becomes the gainer by the achievement of better and better results in every department of human effort. When the individual ceases to regard his work as a chosen one, that is worthy of his best and highest efforts, then it becomes a task that is slighted, a burden carried under the lash of necessity, in which effort is solely directed towards surreptitiously lightening the load, and relieving the shoulders of its galling pressure. Such a laborer in the world is less than inert; he is not only dead to his calling, but he is a load upon it, dragging it downward by his own example and practice.

The gradations of life's pursuits into those of high and low order of dignity, seems to be in proportion to the opportunities that they afford for the slothful, the ignorant, and the indifferent, to maintain their positions in them and exist. The highest callings are those whose duties are least easily performed in a perfunctory manner, those that require for their pursuit something more than indifferent mechanical effort, those that compel from the individual faithful regard, courage, enthusiasm, and high aspiration, before even a mediocre success is attained. Every pursuit in life has opportunities for such ennoblement in the hearts of its followers, whereby its office becomes magnified, and successful performance of its duties becomes marked by a high standard of excellence. When the whole world shall thus aspire upward, then there will be no degraded callings, on the one hand because all effort will be animated by enthusiastic endeavor to attain the best and highest results, and on the other hand because the genius of mankind will then supply the place of human effort in purely mechanical labor, with appropriate machines for its performance.

The world has therefore need of the enthusiasm of the individual for his calling, and if, perchance, in the opinion of many of my audience, I exalt unduly the calling of a teacher, when compared with the professions that they severally adorn and are honored in following, yet in the interest of humanity, I shall bear patiently with their objections, and urge them even to be of the same opinion still, even though after listening to me awhile, they shall be forced to admit that there are some elements of force and justice in my contentions for the teacher.

It is because the office of teacher may be and has been magnified into the highest importance for the welfare of the human race, that it has become one of the most respected and highly honored pursuits. The position of teacher is such that his thoughts, his influence and his ideas of life, have more control on the progress of the world and the direction that it takes, than that of any other profession, not excepting even the min-

istry. While the minister is indeed concerned with the future, he looks forward to a far distant future, not connected with this life, and the pressure of his thought and speech is exerted upon those who belong to the generation in which he lives, and who have little to do with the work of the next generation. In the first place, the intermittent effort of the minister cannot compare in its effects with the steady onward push of example and precept, contact and intimate association, that the teacher enjoys with his pupils. Secondly, not only is the opportunity of the teacher for influence greater, but also the minds influenced are more susceptible, and belonging as they do to the potent forces of the next generation, the teachers have it within their power to recast as they please, when actuated by a common impulse, the whole life, and the political and social standards, of the world.

There is no period in life when the mind is so receptive, the soul so plastic and the heart so enthusiastic as in the days of our youth. It is then that we form the opinions, and develop the phases of character that later become fixed and rigid in their resistance to change. The mind of the teacher is an insistent force pressing and molding the plastic mass into coherent shape, and by his pressure upon this mass, each individual atom becomes a new center of force, carrying forward and spreading in every direction the thoughts, the learning, and the views of the teacher. If we add, further, to this receptive and transmissive character of the student, the natural tendency of his enthusiasm of heart, to exalt the attainments, the character, and genius of his teacher, even far beyond that which the teacher may naturally deserve, we need not wonder at the position which the successful teacher occupies in the world, as a moulder of the thoughts and opinions, the political and social life, of the next generation.

This is not the idle boast of an enthusiast blinded by his predilections, but a fact that has been verified over and over in the history of progress. To the teachers of the past have been imparted priceless jewels of thought and truth. Men of genius have wandered away from the ordinary paths of life, and apart from their generation, seeking such thoughts and truths, and have passed them on into the keeping of disciples and teachers. These teachers have been faithful to their trust, gathering in the priceless jewels, treasuring them, and holding them up to the eyes of those whose sight was not yet blinded wholly by prejudice, and covered with the scales of bigotry and superstition, so that they might see their beauty and recognize their power and influence.

When we read of the reformation and the renaissance, we recognize in them the glow of the dawn, following the long darkness of the middle ages. The night began with the overthrow of the Roman empire, by the northern barbarians, who settled like a black cloud upon its civilization and enlightenment, as well as upon its vice and degeneracy. But whence came that rising sun of light and truth that dispelled the mists, and beamed and sparkled over every hillside and into the deepest recesses of the valleys? When the pall of darkness rolled forward over the Roman empire, there fled before it like the beams of the setting sun withdrawing from the advancing darkness, the chosen few, the scholars and learned of their time, who gathered, with their manuscripts and stores of knowledge, in the more distant city of Constantinople. Here safe from the barbarian tide that overwhelmed the Roman empire, they treasured the gems of ancient knowledge, as a sacred fire is tended and preserved by its priests. Art, science, literature, sacred biblical and classic learning, flourished there safe from the inquisitorial blindness, and scholastic delusions of monk and priest; but when at last, the tide of ignorance had settled, and all Europe was enveloped in its deepest gloom, a great catastrophe befell the sacred city. The hand of the Turk fell heavily upon it, struck down its colleges, destroyed their treasures of art and science, and seemingly stamped out the last vestige of light.

But the Turk was only the blind instrument of a higher power. Europe must blaze with the fires of civilization and truth from end to end, and like sparks of steel from the rough blow of hardened flint, the glowing embers were scattered by the Turk over the continent. The teachers and scholars of Constantinople fled, with what manuscripts they could save, and with their stores of knowledge, to Italy, to France, to Germany, and soon gathering about them youthful disciples, began that revival of classic art and literature and science known as the renaissance, and that regeneration of moral and spiritual life known as the reformation.

From that time to the present, the teacher has been enthroned a power in the land. Kings have bowed before him, peoples have rushed in revolution at his behests. They are the priestcraft of truth, the chosen instruments by which truth crushed to earth shall rise again with renewed power and vigor.

The real progress of humanity, the difficulties that it has overcome, both material and spiritual, and the gains that have been made in practical life, in political and social surroundings, and in moral and spiritual evolution, have resulted from the coordinate efforts of teacher and investigator, and little is due to the purely worldly-minded as an individual. Those who live in the present, and for the present, devote their energies only toward maintaining the present condition of things. Such inertia of mass is indeed needed, or else all stability and all power of energy in acquired evolution is lost; but there is no force in inertia. Humanity can never owe the conservative body any lasting regard as individuals, but only in the aggregate mass, for maintaining the existing conditions, both of good and evil, while awaiting the outward pressure that urges on to better conditions and renewed and more active energy.

The teachers, with their influence upon the rising generation, and their contact with the highest thought, knowledge, and attainment of the world, past and present, constitute the main instrumentality for transmitting the accelerating forces from God to man, and as such instruments they live apart and in a distinct world from the present. On the one hand, they spend their time in a real communion with the prophets and discoverers of truth, and on the other hand they seek to weld the inspiration they have gathered upon the hearts and minds of the youth, and awake the enthusiasm that is to find action in the doings and the possibilities of the future. These qualities of a teacher are such as often subject him to the ridicule of the worldly minded, as theoretical and impractical, but they are the qualities that fit him for his peculiar work, that enable him to seek truth for truth's sake, and that endear him to the youth who are to receive it, because their minds are preeminently sympathetic with the theoretical and imaginative side of life, and enthusiastic in ideas and ideals. Living thus apart from life, free in large measure from its jealous greed and strife for gold, because occupied with other and greater thoughts, viewing the field of life's battles from afar, and drawing inspiration from the generalship of the past, the teacher sees more clearly, perhaps, than the so-called practical man may give him credit, the real directions in which the army of humanity may best be directed to overcome the forces opposed to its progress, and is not deceived by the violent struggle over unimportant strategical positions into which the mass of mankind are urged by the arts of the opposition.

It will be seen that I have placed the teacher, in the ideal and perfect sense of the calling, upon a very high plane, as to his real usefulness and influence upon the world. I do not think that there are many serious minded and thoughtful persons who would venture to assert that this is more than justice. The teacher's life when rightly pursued is an ideal life, and existence is with him an ideal existence on a plane above the level of ordinary struggles. His object is to impart truth, and therefore he must rightly spend a large portion of his time in seeking the truth and contemplating it in all the aspects in which he must be required to present it. The necessity of living above the ordinary level of life's effort as a duty, becomes also a pleasure, when one is animated by the true spirit of teaching; and it thus may happen, perhaps wrongly so, that the teacher becomes estranged with the duties and necessities of ordinary life, that so often make imperative calls upon his time and energy. This estrangement often becomes a marked characteristic of some prominent teacher, so that he is called eccentric, perhaps worse; and while hundreds of pupils have listened, and will continue to listen eagerly, to the words of truth and wisdom from his lips, and await with highest expectation, the new revelations for humanity that come from his searching thought, and higher elevation of mind, behold a rabble follows at his heels and laugh, and mock, because they cannot understand.

I was recently moved most strongly by an instance of this lack of appreciation of true greatness. It so happens that there exists a university whose greatest claim upon the attention of the world is that it is the temple that has sheltered for over half a century a high priest of science so famous that there is not a doctrine of physics to-day, nor a de-

partment of its practical application, that has not felt the force of his touch and the inspiration of his genius. In that university there exists a position of honor within the choice of its students, to which many aspired to place this man, honored and grown gray in services to the university. Other students, however, sought another man well known in the field of politics, and with all the ingenuity and deliberate malignity of party politics, they sought, in their publications, to turn their opposing candidate to ridicule, belittle his services to the university, and as a climax of all, declared this teacher unworthy of the office in that university, because he was a political nonentity —this, of a man whose name will shine down the centuries with increasing power and brightness as familiar in the thoughts of men as that of Newton, when the name of his political opponent shall have been forgotten and buried in antiquity.

Perhaps, however, such distribution of approbation is only a right balancing of results with the aim and efforts of life. Those who seek to live in the present should have their reward; and those who build into the future need not expect to receive the crowns and garlands, that wither and fade, and crumble to dust, in the day of their gathering, nor those meeds of praise that ring in the ears of the multitude for a few hours, and then die away in the unfathomable abyss of forgetfulness.

ROSE POLYTECHNIC INSTITUTE.

(Concluded in June.)

THE GROWTH OF THE ALLEGORY.

A STUDY IN "THE IDYLLS OF THE KING."

By ANNA B. COLLINS.

WHEN quite a young man, Tennyson, like Milton, had in mind to write "a great poem, something that the world would not willingly let die." Like Milton, also, he meant that his poem should be an epic, and that its hero should be the legendary King Arthur. After an interval of more than twenty years, Milton's epic was written, but the Arthurian legends had been abandoned. During an interval of more than fifty years, Tennyson "wrought at his great poem" which resulted, not in an epic, but in a series of twelve poems, more or less firmly held together, which he calls *The Idylls of the King*. As the poems were produced from time to time, there was a steady growth in a double meaning ascribed to the characters, until the whole series, as it stands completed, has a distinctly allegorical significance. This paper is an attempt to trace the growth of the allegory.

In 1833, when Tennyson was twenty-four years old, he published a volume entitled *The Lady of Shalott and Other Poems*. This volume contained his first attempts to turn Arthurian legend into poetry. The Lady of Shalott later became "the lily maid of Astolat;" the "magic web with colors gay" became the silken case braided in patterns emblazoned on Sir Lancelot's shield, to which the maid added

> —"Of her wit
> A border fantasy of branch and flower,
> And yellow-throated nestling in the nest."

The curse, darkly hinted at in the lyric, is Elaine's unrequited love. In the first publication of *The Lady of Shalott*, a parchment lay upon her breast as she floated down to Camelot: this parchment is the letter which Arthur finds in the hand of the dead Elaine of the later poem. The earlier poem was revised in 1842. In the later version, nothing is said of the parchment, but the lyric closes with Lancelot's prayer for God's mercy upon the Lady of Shalott. This brings the lyric nearer to *The Idylls of the King*.

Landor is authority that Tennyson wrote a poem on the death of Arthur as early as 1837, but this poem did not appear in print until 1842. Then it was accompanied by *The Epic*, a sort of prologue, while the poem itself, *Morte d' Arthur* was followed by an Epilogue without a separate title. The volume of 1842 also contained two lyrics based on the Arthurian legends: *Sir Galahad*, and *Sir Lancelot and Queen Guinevere*. *The Epic* and Epilogue are interesting as they show the author's original intention in regard to the treatment of the legends. The Epilogue contains a slight indication of moral purpose in that the dream represents Arthur as "come again and thrice as fair, come with all good things and war shall be no more." *Morte d' Arthur* was later incorporated in *The Passing of Arthur*. *Sir Galahad* of the lyric appears again in *The Holy Grail*. The situation in the ballad, *Sir Lancelot and*

Queen Guinevere, occurs again and again in the Idylls; in *The Coming of Arthur*.

"And Lancelot passed away among the flowers,
(For then was latter April) and returned
Among the flowers, in May, with Guinevere."

In *Balin and Balan* Guinevere says:

"Prince we have ridden before among the flowers."

In *Guinevere*,—

"Rapt in sweet talk or lively, all on love
And sport and tilts and pleasure (for the time
Was Maytime and as yet no sin was dreamed)
Rode under groves that looked a paradise
Of blossom."

Van Dyke, interpreting the poem in the light of Guinevere's sinful love for Lancelot being the sole cause of the fall of the Round Table, finds the germ of the Idylls in the last stanza of the ballad:

"She looked so lovely as she swayed
The rein with dainty finger-tips
A man had given all other bliss,
And all his worldly worth for this,
To waste his whole heart in one kiss
Upon her perfect lips."

In 1857, *Enid and Nimue, the True and the False* was printed privately. In 1859, this poem was separated into two with the titles, *Enid* and *Vivien*, and two others, *Elaine* and *Guinevere*, were added. The title of the volume read—*The True and the False: Four Idylls of the King.* Now for the first time some of the fragmentary efforts of twenty-six years were brought together into some sort of unity. A moral purpose is indicated in the title, *The True and the False.* The poems themselves are character-studies in which the true wife, Enid, and the true maiden, Elaine are contrasted with the false Guinevere and Vivien. There is as yet, however, no allegorical treatment. It is significant that the title-page of this volume also bore the motto, *Flos regum Arthurus*, thus bringing the stories into closer unity by connecting them with the central figure of the legends.

In 1862, a new edition of the Idylls appeared with a dedication to the memory of the Prince Consort. The only significance of this dedication is, that it intimates that Tennyson had been sketching his ideal knight, and that Prince Albert had served him as model. Later, when it served his purpose, he changed the line,

"Scarce other than my own ideal knight."

to

"Scarce other than my king's ideal knight."

In 1870, four new Idylls—*The Holy Grail, Pelleas and Ettarre, The Coming of Arthur*, and *The Passing of Arthur*, were published. *The Passing of Arthur* however, can scarcely be called a new Idyll, as it was only the earlier poem *Morte d'Arthur* with an addition of 150 lines at the beginning and twenty-nine at the close. In this edition, the titles of three of the earlier Idylls were changed to *Geraint and Enid*, *Merlin and Vivien*, and *Lancelot and Elaine*. By giving the names of the knights in the titles, the poems are brought into closer connection with Arthur's Round Table. The six poems called the Round Table, with *The Coming of Arthur* as Prologue and *The Passing of Arthur* as Epilogue were spoken of by the poet as "the whole series."

In 1871, *The Last Tournament* appeared; in 1872, *Gareth and Lynnette*, with another addition of nineteen lines to *The Passing of Arthur;* in 1874, a new passage of 150 lines was inserted in *Merlin and Vivien;* in 1885, appeared *Balin and Balan;* and in 1888, *Geraint and Enid* was divided into *The Marriage of Geraint* and *Geraint and Enid*, thus completing the cycle of twelve poems, or *books*, as the author chooses to call them. From the dates just given it is seen that the poet's most rapid work was done in the years between 1870 and 1874. It seems that he now for the first time wholly abandoned his first idea of producing an epical poem in which there should be a thread of moral purpose, and began to work directly upon the ethical design, making the moral the chief thing. The three new Idylls of 1870 introduce distinctly allegorical characters; the additions made to the *Morte d' Arthur*, when it is incorporated in *The Passing of Arthur*, and the changes made in the earlier Idylls, point to the same moral purpose.

In *The Coming of Arthur* the mystical origin and passing away of the hero is dwelt upon: Bedivere says:

"There be those who deem him more than man,
And dream he dropt from heaven."

Bleys tells Queen Bellicent of the dragon-winged ship and the babe, carried to the shore on the crest of a mighty wave, received by the wizard, while a light from heaven envelops them. When Queen Bellicent questions Merlin about the truth of "the shining dragon and the child," he answers in "riddling triplets" which contain the line,

"From the great deep to the great deep he goes."

That Arthur symbolizes the soul, or at least the ascendancy of the spiritual over the sensual, is implied in Queen Bellicent's description of the organization of the Round Table.

—"Then the King in low deep tones,
And simple words of great authority,
Bound them by so strait vows to his own self
That when they rose, knighted from kneeling, some

Were pale as at the passing of a ghost,
Some flushed, and others dazed, as one who wakes
Half-blinded at the coming of a light.
But when he spake and cheered his Table Round,
With large, divine, and comfortable words,
Beyond my tongue to tell thee—I beheld
From eye to eye thro' all their Order flash
A momentary likeness of the King;
And ere it left their faces, thro' the cross
And those around it and the Crucified,
Down from the casement over Arthur smote
Flame-color, vert and azure, in three rays,
One falling upon each of three fair queens,
Who stood in silence near his throne, the friends
Of Arthur, gazing on him, tall, with bright
Sweet faces, who will help him at his need."

The knights arising from swearing allegiance to Arthur bear

"A momentary likeness to the King."

The "three fair queens who stood in silence near his throne, the friends of Arthur, who will help him at his need," symbolize Faith, Hope, and Charity, the three Christian virtues. Arthur is further supported by Merlin, symbolizing Wisdom, and the Lady of the Lake "with a mist of incense curled about her" symbolizing Religion.

"She gave the King his huge cross-hilted sword,
Whereby to drive the heathen out."

Excalibur may symbolize the "sword of the spirit."

In the lines added at the close of *Morte d'Arthur*, as Sir Bedivere watches the barge with the three queens bearing Arthur away, he revolves many memories, and Merlin's wierd line comes to his mind, "From the great deep to the great deep he goes." As he climbs higher and strains his eyes, he sees the barge "go from less to less and vanish into light."

The Holy Grail has been interpreted as symbolizing a state of things when men's minds are swayed by superstition rather than by the true belief. They leave the obvious, well-known duties near at hand for the pursuit of a visionary thing. The Idyll contains many passages that represent the conflict between good and evil. Ambrosius describes the knights of the Round Table thus:

"For good ye are and bad, and like to coins,
Some true, some light, but every one of you
Stamped with the image of the king."

Percival accounts for the disappearance of the holy cup through the ascendancy of evil:

—"But then the times
Grew to such evil that the holy cup
Was caught away to heaven and disappeared."

The hope that a pure state of society would bring back the Holy Grail is expressed by the priest:

—"And when King Arthur made
His Table Round and all men's hearts became
Clean for a season, surely he had thought
That now the Holy Grail would come again."

When the knights departed on their holy quest, the Queen shrieked,

"This madness has come upon us for our sins."

The effect of sin upon a noble nature is shown in these words of Lancelot:

—"But in me lived a sin
So strange, of such a kind, that all of pure,
Noble, and knightly in me twined and clung
Round that one sin, until the wholesome flower
And poisonous grew together, each as each,
Not to be plucked asunder."

That the higher spiritual nature can prevail in the struggle against sin, is shown in the reply of the king:

"Nay—but thou errest. Lancelot; never yet
Could all of true and noble in knight and man
Twine round one sin, whatever it might be,
With such a closeness, but apart there grew
.
Some root of knighthood and pure nobleness;
Whereto see thou, that it may bear its flower."

As to the characters in *The Holy Grail;*—it seems to me, that Sir Galahad represents not purity alone but humility as well. Through his willingness to lose himself that he might save himself, he was first enabled to see the Holy Grail itself, while all the others saw only the light. Having once seen the holy thing it never after failed him, but moved with him day and night.

"And in the strength of this [he] rode
Shattering all evil customs everywhere."

Percival represents purity in a less degree and without the support of humility. After many temptations, coming through the senses, he meets Galahad at the door of a hermitage, Galahad assures him that he shall see the vision when he (Galahad) passes into the spiritual city to be crowned. He does see it afar and then

"Cares but to pass into the silent life."

Sir Bors was true and loyal. That he was pure also is implied in that he saw the Holy Grail. To his purity was added unselfishness; he would rather have had Lancelot succeed in the Quest than to succeed himself. Humility is implied in his answer to the King:

"Ask me not, for I may not speak of it;
I saw it; and there were tears in his eyes."

Lancelot was a true and noble knight, but his purity was tainted by one dreadful sin. After a great struggle, and a praiseworthy effort to "lose himself in the great sea," he is permitted to see a something which he thought was the Holy Grail, but what he saw "was veiled and

covered." Gawain represents a man moved wholly through the senses. When the vows were taken, "Gawain sware, and louder than the rest," but he soon became "much awearied of the Quest" and was very glad to be assured by "a saintly man" that the Quest was not for him; so he spent his "twelvemonth and a day" in pleasure. The virtues emphasized in these characters are, it seems to me, humility, purity, unselfishness. Moreover the characters seem to represent a gradation from the wholly spiritual Sir Galahad to the wholly sensual Gawain.

A picture giving Tennyson's idea of a wise and blameless king closes *The Holy Grail:*

"And some among you held, that if the King
Had seen the sight, he would have sworn the vow;
Not easily, seeing that the King must guard
That which he rules, and is but as the hind
To whom a space of land is given to plow.
Who may not wander from the allotted field
Before his work be done;"

The remainder of the passage:

—But, being done,
Let visions of the night or of the day
Come, as they will; and many a time they come,
Until this earth he walks on seems not earth,
This light that strikes his eyeball is not light,
This air that smites his forehead is not air,
But vision—yea, his very hand and foot—
In moments when he feels he cannot die,
And knows himself, no vision to himself,
Nor the high God a vision, nor that One
Who rose again."

These lines represent Arthur as the soul and touch upon immortality. The comment of Percival: "So spake the King: I knew not all he meant," is significant in that it implies that Arthur, dominated by the soul, had a keener spiritual insight into life and its uses than did any of his knights.

[Concluded in June.]

ADDRESS OF COLONEL FRANCIS W. PARKER.

Delivered in the Old Stone Temple at Quincy, Mass., April 20, the Twenty-fifth Anniversary of the Quincy Movement.

THE people and teachers of Quincy, Massachusetts, celebrated the twenty-fifth anniversary of the "Quincy Movement" in education April 20, by meeting in the old Stone Temple. Colonel Porter, the first mayor of Quincy, presided, and Dr. William T. Harris, United States commissioner of education; Dr. Nicholas Murray Butler, dean of philosophy in Columbia university; Robert C. Metcalf, supervisor of schools, Boston; Orville T. Bright, superintendent of schools in Cook county, Illinois; and Colonel Francis W. Parker made addresses.

On the 21st a banquet, held in the Vendome Hotel, Boston, followed the meeting. Herbert W. Lull, superintendent of schools in Quincy, presided, and George I. Aldrich, superintendent of schools in Springfield, Mass., was toastmaster.

After alluding to the pleasure it gave him to meet his old friends Colonel Parker said:

There was an opportunity, a sensible school board, a board that conducted its affairs upon sound business principles, upon a plan that has always, in all times, brought success, a plan that the entire business world unqualifiedly endorses. No other plan has or will ever succeed. To appreciate this famous board, it must be compared with other boards of the same functions. To have been for forty-six years a teacher of the common schools gives one a fair basis for comparison.

One of the profound mysteries in this world is the marvelous psychological change that comes over respectable, intelligent, and otherwise wise laymen when they are elected by their fellow-citizens to serve on school committees. Persons who would never dream of superintending an electric plant, managing a railroad, building a bridge over Niagara, leading an army, or commanding a ship, enter upon the duties of a school committee with the astonishing presumption that they can with safety minister directly to the welfare of children, mold society into right living, and shape the destinies of a nation by means of common education; that they can make courses of study, select teachers, examine pupils, and manage the internal and pedagogical affairs of a school system. This prevailing state of affairs would be ridiculous were it not so awfully solemn. The presumption of school boards is the acute distress of the nation; it is the culmination of bad politics, the very worst by-product of democratic evolution. For this presumption millions in money are wasted every year, countless children suffer, and free government is imperiled.

The members of the Quincy board of education

made up their minds, after the most careful and thorough consideration, that they were not equal to the task of managing the schools which the good citizens of the town had entrusted to their care.

It is often said that when a school board gives up its authority to an expert its duties are ended, that indeed it has nothing further to do. This was by no means true of the Quincy committee. The superintendent was given full power to conduct the schools as he thought best. There was, however, one absolute requirement—he must succeed; and the committee was the judge of success or failure. Previous to 1875 the committee had examined yearly the schools in order to ascertain the progress of the pupils; now they proposed to inspect the schools to find out the efficiency or inefficiency of the superintendent; and well they did their work. What criterion they had, or upon what basis they estimated efficiency, is not known. Probably they estimated the real life of the school, the happiness and earnestness of the children, rather than technical details and quantity of book work done.

The school board's most important task was to defend the schools and the changes in the work of the teachers.

Good people do not easily alter their ideals of education. I have sometimes thought that theology had the deepest and strongest hold upon the human mind, especially in New England; but that is not true; educational ideas are by far the slowest to change. Noah Webster is mightier than Jonathan Edwards, technical grammar, than predestination. It is useless for any one who attempts to improve education to complain; the right way is to recognize the situation and make the best of it. Human progress is measured by the time it takes for a good idea to get into life.

The board of education fought many battles, and fought them all with great earnestness and wisdom. One battle stands out above all others. The battle ground was the old Town Hall, which was packed with eager voters. Late-comers were obliged to stay outside, although it was a rainy day. Two thousand dollars a year seemed an immense sum for the tax-payers to spend for a man who walked or rode around from school to school. The leader in the campaign against extravagance moved a reduction of the appropriation that would cut off the man who amused himself by supervising the schools. The motion was carried with a rush. The second town meeting succeeding the first by a few days was extremely interesting. I shall not attempt to describe it—the memory of it always gives me a thrill. It was a battle royal for the little ones. I thought of the old days of Otis and Patrick Henry. At this meeting a motion was made to reconsider, backed by eloquence rarely heard in these days. Only the leader voted against the motion, and the original appropriation was carried without a dissenting voice.

The battle for the common schools is the battle for human liberty, and Quincy was fortunate in the defenders of that which lies at the basis of our republic.

Permit me to interpolate a personal statement. I have been accused of fighting battles. It is not true. I never fought a battle, unless trying to teach school is fighting. The school committee did all the work of defense, and each member was a host in himself. The superintendent was granted the entire supervision of the town schools. The choice of teachers and their dismissal, the making of the course of study, the examinations, indeed everything that pertains to pedagogy, he relegated to his principals, and they in turn to their teachers. The tyranny of the superintendent consisted in demanding that every teacher should become free through self-effort.

The onus of all things disagreeable, such as the dismissal of teachers, the board took upon itself, merely asking the superintendent to make suggestions, which were sufficient for action. It gave generously an efficient support at all times; it did not hesitate to criticise, advise or suggest. The first annual report was written under the frank and wise criticism of the committee; it was re-written several times. The command was, "Make the people understand what you are doing." Through forty-six years I have never found another such efficient school committee.

The new superintendent had immense faith in the possibilities of human growth by means of education, a faith which had grown with his years and is now stronger than ever. He had also a great faith in free government, brought about by educating children into freedom through self-activity. The battle for freedom, he thought, is not to be fought out in cruel, bloody wars, not by armies and navies, but in the common schoolroom, the camp and training-ground for citizenship. The lessons of the Civil War were to him lessons that taught how such awful horrors may be prevented by education.

Such faith led naturally to a spirit of work, of struggle, of research, of open-mindedness, for the truth. He had instinctively an all-controlling love for children and a strong desire to help them to good lives. Twenty-one years in the

common schools as a teacher, including three years in country schools and three years as principal of a normal school, had taught him very thoroughly the fact that he knew very little about the art of all arts. Every book upon education, printed in English, was on his shelves, but in them was scant knowledge of how to teach an American school.

I will not attempt to describe the educational situation in New England. One fact illustrates it fully: A diligent search was made on the rich and loaded shelves of Boston booksellers. One educational work, and one only, was found, a second-hand copy of Currie's *Grammar School Education*. Do not misunderstand. Very much had been done in building up the the common school. Most school systems were thoroughly organized. That of Boston has furnished the pattern of organization for all time. There were excellent teachers, noble, disinterested men and women; but naturally tradition controlled, and there was a general, though unconscious, belief that most things in education were fixed and finished, Among thoughtful people, however, there were grave doubts as to the profitable expenditure of school moneys.

The superintendent had an overwhelming desire to find out what was true and what false, what should be eliminated and what brought into the lives of the children. He longed for an opportunity to study with thoughtful teachers, to study children in order to ascertain that which was best adapted to them. There was not one question of progress about which he was fully decided, except to study education with the right attitude towards genuine development. He found thoughtful teachers, some of whom had been doubting and studying for years, others who were ready to put themselves into the work with hearty zeal. The teachers, forty-two, I think, in number, formed a faculty for the study of education. The superintendent led them as best he could, getting from them far more than he gave. The authority he had received he relegated to them, and in return demanded close study, original thought, creation, observation, reformation and independence. The teachers' meetings were the central means of movement. The superintendent trudged from school to school, watching the teachers, criticising them personally, holding conferences, and discussing questions. He taught in every class, over and over again, not by any means because he was a model, but because he wished to learn how to teach. It was exhilirating, delightful work, though filled with errors and doubts, crude, unformed, experimental, but withal progressive. He found genius among the teachers. One among the best has gone to her reward; she was a native of Quincy and a child of truth. There were very few teachers who failed of re-election. They tried, they struggled with the problems; some failed, but most succeeded. They were ever ready to take and use criticism, ever ready to acknowledge failure and to look for better things. I shall never forget them, that little band of heroes. I see them now, facing the children and the eternal questions.

What has been accomplished? I should be most happy this day to clear up some common errors that have crept into the general judgment. There never was a Quincy method or a Quincy system, unless we agree to call the Quincy method a spirit of study, and the Quincy system one of everlasting change. A method in teaching means to most people a certain way of doing things, a way fixed and finished; something that has a beginning and an end; something rounded, routinish, and efficient; a panacea like a patent medicine that may be applied with unfailing results. Method in this sense is the common and awful delusion of the present day. With the artist teacher method is the way he or she reaches an ideal. Therefore, method is entirely personal, ever changing, ever improving. Insight, elimination, improvement, are the elements of upward and onward movements. We the teachers of Quincy as a faculty wrestled with the greatest problem ever given to man. The faculty and its meetings brought inspiration, enthusiasm help, and each teacher applied the things found in his or her own way, developing personality and, therefore, personal ability.

Those who seek for some special and peculiar method or device in the Quincy movement will never find it. Faith, ideal spirit, explain all that pertains to our success, whatever that success may be. The outcome was what may always be expected under similar circumstances—progressive movement. If you ask me to name the best of all in results, I should say, the more humane treatment of little folks. We tried to teach them, "not as children nor as pupils, but as human beings." Each child has his own individuality, his stream of thought, his desires, his hopes and fears, his grief and joy. In school the child has too often a separate stream of thought, or a stagnant pool, totally separate from his real life. A child should have one life, wholesome and complete, and the home life and the school life should each supplement the other. However loving a teacher may be, the method of teaching rarely discloses a deep sympathy, which is the best there is in any

teacher. We tried to make the children happy, so happy that they should love to go to school. The rod was well-nigh banished. The doctrine of total depravity will have much to answer for in the day of judgment. Flogging is the direct result of the belief that the child is innately bad, and must be whipped into goodness.

We knew that the child is good, if he has a chance, an environment of goodness. This knowledge came to us from actual experience. One beautiful incident threw a flood of light upon the child's soul. Little Bumpus, who was blind, entered Mrs. Pollett's class of six-year-olds. Without suggestion, the dear little folks put their arms around him and said, "We'll help you." Humanity begets humanity. Children long for something to do, and they love right-doing far more than they love wrong-doing.

The systematic cultivation of selfishness by bribery—per cents., material rewards and prizes were banished. The dark clouds were cleared away, and a higher motive, a nobler ideal, came into view. The humane treatment of children cannot be brought about by any particular method. It must spring from a deep sympathy, backed by courage and skill. The old-fashioned, stiff, unnatural order was broken up. The torture of sitting perfectly still with nothing to do was ruled out, and in came an order of work, with all the whispering and noise compatible with the best results. The child began to feel that he had something to do for himself, that he was a member of society, with the responsibilities that accompany such an important position.

I might end this description here, for I have told all that is essential. But there are mistaken opinions to correct, opinions that have done much harm. For one thing, we did not banish text-books; we added to them; change, not banishment, was the order. It had been the custom for pupils to read through in a year one little book that a bright, well-taught child can read from end to end in a few hours, providing always that he is not disgusted with the contents. They learned the book, often, by heart from their older brothers and sisters; they could say every word, chant it, sing it, repeat it in their sleep, behold it in nightmares. It did not require much wisdom or even common sense to furnish the children with all the best literature then published. The committee appropriated $500 for children's reading, and I spent it as best I could. I packed the precious freight of new books into an express wagon and drove from school to school, taking up books and furnishing fresh sets. The flood of literature for schools we have now is not twenty-five years old. The introduction of so-called supplementary reading, now well-nigh universal, was then exceptional.

The spelling book was laid upon the shelf. Spelling was learned by the Quincy children in the same way that the human race learns to talk, by writing correctly and continually. Language was learned as it always must be learned, by using it correctly. Technical rules came in where needed. The alphabetic method was consigned to oblivion in obedience to commands from the highest educational authorities. The outcry against this defiance of nature had gone up for hundreds of years.

Learning by heart condensed and desiccated statements in geography and history was to some extent eliminated. Geography began with the real earth, and "mud pies" were introduced. I remember an old beehive stand just back of the Coddington school. The stand furnished tolerably good legs and frame work. The top had been taken off and a molding table put thereon. With sand and images of continents we imitated the bees.

The committee said, "Three R's only," and I echoed it, with the mental reservation that some day, please God, the children should have better nutrition than formal teaching. They should have the great book of the Creator, and learn from it that "day unto day uttereth speech, and night unto night showeth knowledge." A naturalist took the principalship of the Willard school. He brought specimens of stuffed birds. One day Charles Francis Adams and G. Stanley Hall were visiting the school. On request the principal brought in a stuffed duck which the pupils had never seen. I asked the children (it was the third grade) to write about the duck. They went at it with a will, and their slates were soon filled with good writing, correct spelling, and withal excellent thought. The visitors watched the work with interest. Mr. Adams turned to me and said, "You are teaching natural history." "No," I replied, "this is language." So it was, with a bit of thought behind it.

The criticism was made on all sides: "The children are amused and happy; they love to go to school; but do they learn? Can they spell?" And so on. Many of you may recall the Norfolk county examination. George A. Walton (no better man could be found), under the direction of the Norfolk county school committee, examined the schools of the county town by town. The examination was in the so-called essentials, the three R's, geography and history. John Quincy Adams gave $500 to have specimens

of penmanship, number work, and composition lithographed. The results were published in a pamphlet. Figures gave the per cents., town by town. The towns were lettered A, B, C, etc., so that no one knew the particular town so lettered. The pamphlet created a sensation. Many declared that the examination was not fair. They were astonished at the results. Later on an edition of the report came out, with the names of the towns given in full. Quincy had by far the highest per cent. and led in everything except mental arithmetic, and in that it stood third or fourth. This is the first time, so far as I know, that the foregoing statement has ever been made in public.

We learned that the children may be happy, may love to go to school, may never have a prize, reward or per cent., and still learn. In fact, the reason why students manage to escape knowledge is that knowledge and skill are made the sole aims and bribery the means of learning.

I might fill hours recalling the memories of Quincy and its schools, but to what end? The apparent success of the movement is easily explained. There was the opportunity, a faith, a spirit of work, an enthusiasm to find better things for God's little ones. The outcome cannot be explained by methods, devices and systems, by tricks of the trade, or by particular ways of doing things. What we did in Quincy was nothing new; it came directly from the great authorities in education. What we did is now well-nigh universal; but the mere following of authority, however good, does not always count for progress, repetition of devices does not necessarily bring improvement.

We stand to-day at the beginning of an educational movement that means the salvation of the world and its elements are faith, spirit, openmindedness, and work. The teachers are not responsible for what wrong ideas may exist, nor can school committees be justly blamed. The common school was born of the people, it is supported by the people, and its faults are found in the people. The people must demand, and they will receive; they must knock, and it shall be opened unto them. We are bound by tradition, by mediæval ways and deeply rooted prejudice. The good that has been done is simply a foretaste of what is to come. Our ideals are low. The future demands an education into free government, a strictly American education, an education to meet the demands of these times, with their world-problems that are weighing us down and the ever increasing duties of citizenship. I repeat, not by the guns of a Dewey or the battalions of Roberts or Kruger must these problems be worked out, but in the common school, where the quiet, devoted, studious, skilful teacher works out the nature and laws of life, complete living, and the righteousness that is to be.

INDIANA TEACHERS, NORTH AND SOUTH.

THE northern association at Logansport and the southern at Evansville were two great meetings. Each enrolled over 2,500 names. Both were strong in the interest shown and in the quality of instruction given.

The inaugural address of Superintendent J. N. Study as president of the northern association was an interesting, scholarly, and comprehensive discussion of the present trend and problems of education in America. He first reviewed the progress of education from the early civilization on the Nile up through the monastic and scholastic systems to the present education by the state, not only free but compulsory. He expressed his belief that the state's duty reaches from the kindergarten to and through the university. He showed how the new education seeks to apply the arts of learning to actual life, educating the child in harmony with the spirit of the age in which he lives. "Dare to be wise and omit what does not belong to present life." He pleaded for a broader professional preparation on the part of teachers, and for conditions that would make the tenure of his position safe. The whole tone of his address was earnest, sane and hopeful.

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The series of addresses by O. T. Corson and David Starr Jordan was delightful and helpful. Mr. Corson talked in a general way of what the teacher should be and do, and of his relations to school and society. Dr. Jordan's addresses were more scientific, appealing to the scholarship of the teacher more than to his professional fitness.

The work of each instructor was thus in a large way supplementary to that of the other.

* * *

In Mr. Corson's first address he pleaded for a renewal of faith in humanity, faith in childhood, faith in self. In making these appeals he discussed in an entertaining, helpful way many of the practical school problems. "A man who fills his position well is just as certain to raise to a higher level as the person who occupies a position above his level will sink to a lower one." His picture of the good school teacher was so simple that most teachers must have felt themselves capable of measuring up to the standard of earnest, cheerful devotion.

Speaking on the subject of "Tact in the Schoolroom," Mr. Corson said, "Tact can afford to sit sit still and smile while talent and genius are quarreling." A comparison of tact and skill showed a clear advantage in favor of the former. The great men have been men of great tact. The Great Teacher showed this in a remarkable degree. The closest second to tact, and the surest medium for cultivating it, is sympathy.

Mr. Corson's closing talk was on "Relation of the Superintendent to Teachers." Here, too, sympathy was considered the chief thing. The superintendent needs wisdom more than knowledge. "Wisdom is knowing what ought to be done next; virtue is doing it."

* * *

Dr. Jordan's addresses were for the most part scientific studies of certain historical movements. In his first discussion, on "The Rise of the Common Man" he said there were four archenemies to democracy; namely, aristocracy, slavery, militarism, imperialism. The important fact in history is the rise of the common man. As we look back over the past we find that the importance of the king grows less. Each movement must be judged in its final results, by the greater strength or greater weakness of the people it concerns. The deeds of Napoleon were writ on sand. The one fact which remained was the waste of the hearts' blood of France, a loss of strong life which a thousand years of peace could never restore.

Suppose for a moment that the German emperor and all his officials, every lord and every soldier, every semblance of power in Germany should pass away, what would result? How would men begin government again? How would it be in England, or France or Russia? Think this out for yourselves. How would it be in the United States? We should be sorry to lose them at all, officials and officers and senators and soldiers. But it would not affect our action. Some veteran or some schoolmaster would call the people to order in each town and we should proceed to the election of officers. The power rests with us; we have only to start again.

The evening lecture by Dr. Jordan was from the subject "The Blood of the Nation." Its purpose was to establish the proposition that the blood of a nation, using the word blood in the sense of vitality, determines its history." Degeneration in the individual is the result of association, and degeneration in a nation is the result of removing the best, the fairest, the strongest.

He spoke of oppression, both social and religious, driving forth the good and the brave, resulting in the settling of America; of the effect of liquor in destroying the good and the pure. Neither beer nor wine, he said, was a strong agent for temperance or self control.

War for glory, war for commercial greed, he classed as the greatest evil in destroying the good, the brave and the best. He cited the history of nations, France, for example. When Napoleon let out the heart's blood of France, France was degraded. The Greeks of today were the sons of cooks, scullions and slaves of ancient Greece. Spain, too, was cited as an example of degeneration.

In speaking of the United States he said that the Revolution was necessary to freedom and that the Civil War was a necessity. Yet it took the lives of a million men, the best we had. It was not so much the mere thought, the sentiment, that these men died, but the fact that they and their descendants, strong men and women, who ought to be are not. Thus the cutting off of strong life everywhere weakens a nation, inevitably. The greatest political good is peace and justice, and the Christian virtues are industry, sobriety, kindliness.

In the closing address Dr. Jordan took for his subject "The Strength of Being Clean." It was an inspiring appeal to purity and temperance in all things. The thought that was repeated over and over was the danger of unearned happiness. The inevitable law of compensation makes happiness of that kind impossible in the end. Every artificial elation must be followed by a corresponding depression. He admitted that one person could endure certain dissipation longer than another, and that each individual must decide that for himself. But he urged teachers to be honest with themselves. The strength of the Puritans was not so much in their abstemious

habits as in the fact that they lived up to their convictions.

* * *

If the work of the instructors did not meet every expectation of those teachers who wanted a purely professional program it was inspiring and helpful to the great majority who go to such meetings to have their spirits refreshed, their ambitions renewed, and their views of life broadened.

Anderson gets the meeting next year and Superintendent J. W. Hamilton of Monticello is president-elect.

* * *

The Evansville meeting was a very close second to the one at Logansport, as regards numbers, and quite its equal as regards helpfulness and interest. The address of Superintendent W. H. Wiley, president of the association, upon the subject "The Teacher's Opportunity," was a careful and thoughtful review of the teacher's place and influence in America to-day. He pointed out how the work of teaching has developed into a profession, and how progress is attended by both influence and responsibility. The teacher has grown by the criticisms directed against him. He has been ready to accept and encourage reform, and has eagerly, persistently, sought to initiate and lead reforms. He has learned that the great problems of education must be solved by the teacher. Due attention was given to the teachers' opportunity for promoting good citizenship. "The great questions now agitating the public mind as well as those which must arise in the future will be largely settled by the character of the education now being given the children. There is unbounded opportunity for the teacher of to-day to have the rising generation enlarge and elevate its ideals—to strive for the attainment of better things, set at distances plainly visible and within reasonable certainty of achievement." The speaker was inclined to believe that the time may be near when all the partial solutions of educational problems shall insure full and rounded ideals of achievement.

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Habits and their formation was the subject of Dr. John Dewey's opening lecture. He said that any normal habit grows out of a natural instinct. The child is an explorer from infancy; its instincts are expressed in habits. The impulse comes from within. "Drill," as a means of forming habit, is wrong because the directing power is outside the child. The child's language habit should be the spontaneous expression of its own impulses. In the Dewey experiment school in Chicago certain social and industrial occupations are made the central thing. There is no formal attempt to teach reading, spelling, number, etc., but these are all learned incidentally in the informal study and conversations relating to these centers of interest.

In his evening address Dr. Dewey spoke of "Pending Educational Problems." He began by pointing out that the successive closings of the centuries have been quite generally marked by great events in the world's history. The end of the fifteenth century was a time of great discovery. The end of the sixteenth marked the decline of unprogressive Spain as a world power, and the advance of the progressive Anglo-Saxon. The closing seventeenth century saw the establishment of the rights of the people, and a century later came the French revolution. The closing nineteenth century witnesses the activity of many great forces, not least of which in our own country, is the prominence of universal education. The establishment of this principle has settled once for all the question of privileged classes. The state is dominant, and the state supports free and universal education. There is an enormous investment in buildings and equipment of every sort, and a constant lavish expenditure to support education. What are we going to do with it? The speaker recognized the existence of three important problems:

(1) How to make the school a social organization, how to deal with it as a form of community life closely related to the family, the church, business and politics. Courses of study are being modified so as to help accomplish this. Manual training and other studies which connect directly with outside life are introduced. Methods are modified so that the child can bring his whole mind—his usual experiences and interests, to school with him instead of only a fraction of it. In the kindergarten children learn to make social combinations and adjustments. The learning of leadership and subordination is thought as important as the information acquired or the skill attained. In the grades and high schools, self government is taught and practiced. Teachers are realizing that besides tasks and recitations there are the lessons of social cooperation and mutual endeavor. (2) There must be a closer relation between the intellectual life and the life of action. Some complain that the schools prepare for scholarship rather than for life. Others reply that the de-

mand for utility is narrowing and commercial. The duty of the school is to sweeten and enlighten toil. It must combine culture and utility. (3) The child's individuality is to be recognized. This must not conflict with the social or community life of the school. But in a democracy, we can not train future citizens by making the school a monarchy. Suppression must give way to expression. The order kept by the teacher must yield to the order of the child's own interests and motives. Work of the pouring-in kind must be replaced by active, constructive work that makes the child a doer. The problem of education is thus the problem of life itself. Every nation, every century, every generation sets up its own ideal and its chief problem is to work it out. Education is now the chief instrument. Its influence is greater than that of law, politics or business. The spirit in which the school is carried on determines more than anything else whether a people shall be successful in realizing its highest aims.

Dr. Dewey's closing lecture was upon "The Place of the Imagination in Education." It was exceedingly simple and filled with practical suggestion. He used the word imagination as the power to call up or image what has been before presented to the senses. He held that the power should be cultivated, and that its practice should go hand in hand with sense-perception. Some people—some children are visual or eye-minded, others are ear-minded, others are motor-minded. The teacher should know the prevailing faculty of each pupil and recognize it in teaching him. The child has not much pure will. If we understand his disposition we may suggest action to direct his conduct. Thus to know by what means a child is influenced should suggest methods and means for both mental direction and moral control.

* * *

The lectures by Miss Sarah Louise Arnold were of the kind that appeal to the sentiments and send teachers back to their schools resolved to reform many faults and errors. She made it clear that there are worse things in school than whispering and worse things on the playground than snow-balling. Her remarks on the per cent. system must have convinced many teachers that there are things besides the recitation that need to be considered in "marking" a pupil's standing. Her ideal is a time when the diploma shall read something like this: "Know all men by these presents that J. J. Smith, having done his level best in the grammar schools for five years is hereby honorably discharged." It is to be hoped that many went home resolved to mark no more forever.

* * *

Professor E. W. Kemp read an admirable paper on "History in the Grades," which has been promised for an early issue of THE EDUCATOR. His main thought was that the historic movement should be studied as it occurred, not as made up of disjointed, isolated facts, but as a unity. The early work should give a clear, general view of the institutional stream in its development.

* * *

A paper read by Miss Emma McTaggart of the Vincennes high school showed great care in preparation, and was presented in so delightful a manner that the smaller number who heard it regretted that it could not have had a place earlier on the program. Her subject was "Honesty in School Work." She made many good points.

* * *

The programs both at Logansport and Evansville were too much crowded. If it is necessary to make them long in order to provide against possible failures then have it clearly understood that certain numbers are only contingent.

A steamboat ride of twelve miles to Henderson, Ky., and return was a delightful feature of the Evansville meeting which many teachers enjoyed.

The physical culture exercises given by the various grades of the Evansville schools were much commended by the visiting teachers.

The southern association next year goes to Seymour. Superintendent Charles N. Peak of Princeton is president.

* * *

An adequate description of the art exhibits at both associations would require a separate article. This is an admirable feature. It has developed rapidly in the last year or two, and THE EDUCATOR regrets that individual commendation is impossible because there was so much that was excellent.

It is right to be contented with what we have but never with what we are.

—James Mackintosh

MUSIC.

EDITED BY

J. G. CRABBE, Ashland, Ky.

SOME POINTS AND A QUERY.

When I call teachers to account for unsatisfactory results in arithmetic, now-a-days, they simply refer me, with quiet dignity and somewhat injured air, to the pronouncements of certain educational journals and to the creeds of certain eminent scholars, which, I must confess, seem to say that teachers need not hereafter concern themselves about skill and accuracy in the fundamentals of arithmetic; that *results*, in the ordinary sense of that term, are but poor tests of a teacher's success; that the measure of success is to be determined by a sort of ethico-psychological course of reasoning (in homeopathic doses) that helps to make every teacher feel cheerful and happy, no matter what tests and examinations may indicate as to results in multiplication, or division, or fractions, or percentage; in short, that we do not teach arithmetic in order that boys and girls may acquire mathematical skill and accuracy, but that they may, by means of a semi-mathematical massage, become developed and rounded in certain (?) cycles of mental and ethical activity.

* * *

This year a teacher was to discuss, at a teachers' conference, "Why pupils who complete a systematic course of vocal music in the public schools, are not able to read ordinary music at sight." In view of the fact named above, I was not greatly surprised to find that she chose to discuss school music in general, not touching the point in question except at the conclusion of her excellent remarks to say, that the purpose of vocal music in the schools should not be the acquisition of a knowledge of musical forms and principles and of skill in reading music, but ethical and æsthetic culture, *et cetera*.

* * *

Now without taking any text, I should like to preach, to sensible, conscientious teachers a little sermon. Too many of us have been overwhelmed in the tide accompanying the spread of psychology, child study, correlation, apperception, preservative adjustments, categorical imperatives, and numerous doctrines of the "Newest Education." We have striven to hide our disinclinations and imperfections behind a mass of unintelligible verbiage, poor theorizing, and bad pedagogy. But as sure as time rolls on, the day of the three R's is coming again to the confounding of the careless teacher. The "three R's" will include systematic training in music, and there will be a stronger demand than ever before, that pupils shall become fitted to read ordinary music at sight, just as they shall be expected to read the best English authors at sight. The purpose of singing at opening exercises, and of songs at recreation periods, is vastly different from the purpose of singing at the hour allotted on the daily program to "systematic instruction in music." Music has a thousand values in the school—æsthetic, ethical, spiritual disciplinary,—but, that pupils may receive the largest benefits from its study and influence, they must learn to read music readily—not as an end, of course, but as a means to an end.
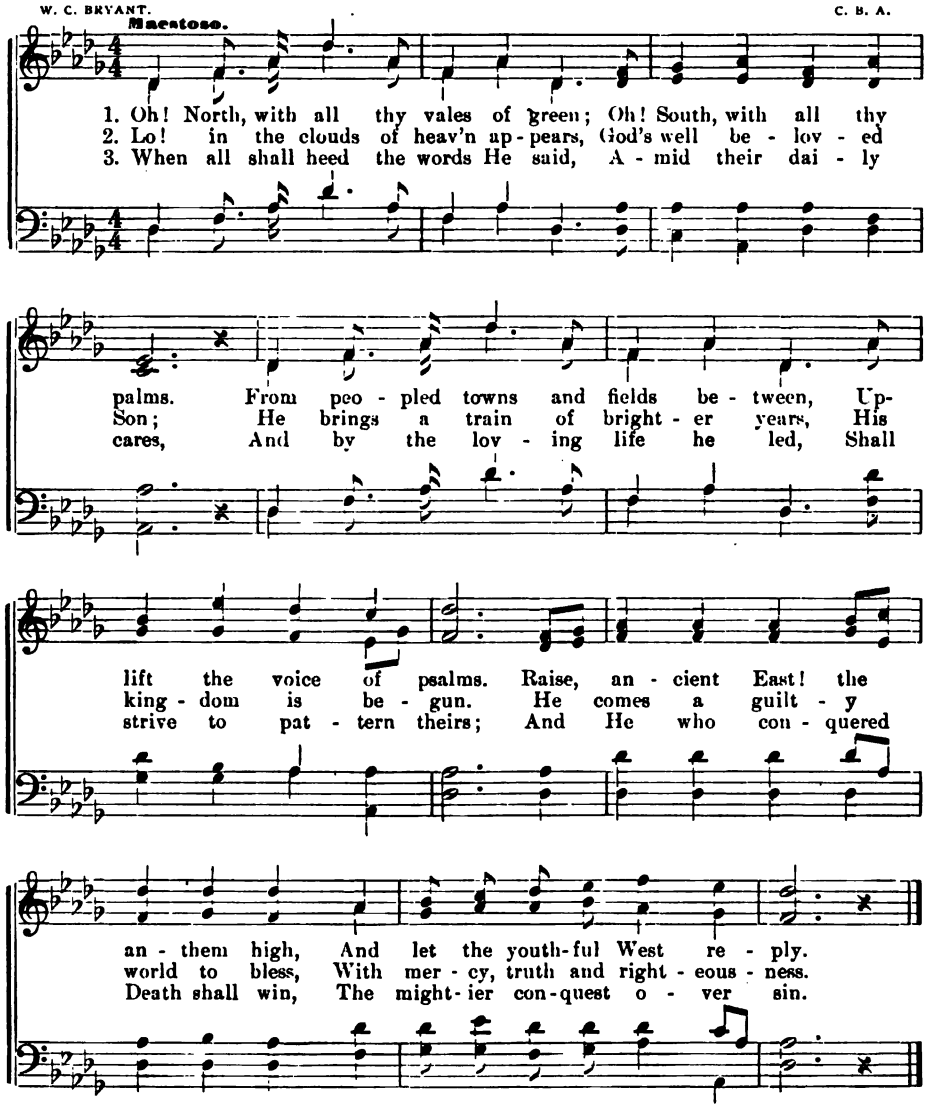
* * *

I can not speak of other subjects of the school curriculum,—I wish that there were time and opportunity to do so—but as to music, let it be known to teachers generally, that the principle here suggested forms a part of the creed of the best supervisors of music and of the best teachers throughout the land. Why then, are results so meagre,—why do not the pupils go out from our schools well-prepared to enter the service of the volunteer choirs of any of our churches, and to read music successfully in the varied fields?

This question has been put in these columns before; we now invite brief, practical answers to this practical query, that we may have a profitable symposium. Send answers at once to the editor of this department at the address above.

To teach a child-song well one must be a child-lover and a song-lover; the child to be loved not for what it is, but for what it may become; the song to be loved not alone for the pleasure it gives now, but for the future pleasure one may have merely by turning to it. That is the great joy of mental possessions; we use them but to increase them. —*The Etude.*

Music for the Common Schools.

OH! NORTH, WITH ALL THY VALES OF GREEN.



PRIMARY.

EDITED BY

FLORA J. COOKE, Chicago.

LITERATURE FOR THE LITTLE ONES.

The time has passed when teachers need to be urged to give literature the place which its value merits in the primary school. However, the *basis for the selection of stories and their adaptation to the needs of a particular class of children* will always be interesting topics for consideration. The results of several years' experiments in this direction are here given.

I. THE SELECTION OF STORIES.

If the fundamental activities and interest of children determine the choice of stories, a detailed list of those used during an entire year, with any adequate explanation as to the motive and adaptation, would be too varied and comprehensive for the limits of one article. It is possible, however, to group the kinds of stories chosen from this standpoint under four general heads:

1. *Stories which embody ideals of courage, generosity, strength, wisdom, unselfishness, kindness to animals, etc.*

Children instinctively imitate what they admire. For instance we have all noticed the influence of a father, a policeman or even a teacher as we have watched the child graphically reproducing their chief characteristics in his play and unconscious actions.

It is because the responsibility of the ideals of the children depends so largely upon the parents and teachers that we make the strong plea for the careful selection of stories. Their influence is only second in importance to that of personal example, and the child's needs, experiences and tendencies should determine their choice. Stories bring the children into contact with the world's standards of what is brave, wise, and kind. But the final test of the story is its power to arouse in them appropriate emotions, which unconsciously but immediately find expression in their daily actions.

This is illustrated by such a story as "The Wise King and the Bees."

In this story King Solomon is presented by the queen of Sheba with two bouquets, one of real and one of wax flowers. Being unable to decide which were the natural flowers the King said—"Open the window for my friends the bees, they shall decide this question for me." In this way the children are introduced to the so-called "*wisest* man" and wisdom appears in a form which, from actual experience, the youngest child in school may understand and appreciate. Again it is most interesting to trace the growth of ideals in children in a series of stories illustrating different types of courage. Among many stories used in this connection were the following:

"William at the Natural Bridge in Virginia," found in *Monteith's Science Reader*,—a type of pure physical courage; "Casibianca," a poem,—a type showing unreasoning physical and moral courage; "Peter at the Dyke," a poem by Phœbe Cary,—type showing reasoning physical and moral courage; "Prometheus," classical myth,—highest type of physical and moral courage.

The children were allowed to compare these heroes choosing the one they considered bravest, for dramatization, or the one they preferred to represent, always giving the reason for their choice. Although the heroes named above probably never existed they illustrate in simplicity the desired types. The characters chosen for representation were also quite frequently chosen from real life and history.

2. *Stories of Industry and Invention.*

These stories are usually told when some condition makes the children feel the necessity for a certain invention or a particular kind of work. They are first given the opportunity to experiment, trying to solve the problem for themselves. For instance:

In connection with their work on food the children needed vessels for holding water, dry materials, and for cooking purposes. They examined the dishes at home and suggested ways of making some for use in the schoolroom.

As their efforts were not entirely satisfactory they were prepared to appreciate the crude products of primitive peoples as they had experimented in the same direction. The children noted with great interest the simple forms, unglazed surface and crudity in decoration in this work. At this stage a potter came to the school and illustrated how modern dishes are made and shaped with ease and accuracy.

The children then examined many modern specimens of pottery and the influence of the work was marked in their taste, in their observation as to differences and improvements, and in their general interest in the dishes, in the home and in the stores visited. Later in the year they made a set of clay dishes which they decorated and burned in a rude kiln. Among the stories told in this connection were "Grandmother Kaolin," "Clay Dishes," Lora Wiltse's Kindergarten Stories, "Story of Palessey the Potter," "Story of the Porcelain Stove," Kate Douglass Wiggin, the story of how books were once made of clay.

In the same way the methods of the heating and lighting of houses, the purification of water for drinking, the manufacture of cloth—the ways of telling time and the making of tools for the garden was worked out by the children in the primary grades.

3. Home and social activities of the children.

Some part of this work comes into each month's plan and constitutes the beginning work in history.

In November the children have the story of the "First Thanksgiving Day" and how it came to be. In December they are given in some dramatic form the stories of the children of different nations, who, while they speak different languages, dress differently, and have perhaps a different climate, yet in so many lands celebrate this same day as happily as we do.

On account of space we cannot go into the details of this work but shall suggest in general one of its phases, that of the *home*.

The children give their own ideas of the use of the home as a protection against cold, storms, enemies, etc. They are asked to construct a model of a shelter that would protect them in a certain given season of the year.

They examine their own homes and begin for the first time to appreciate the skill and division of labor necessary to produce the common comforts which they enjoy. Their own efforts usually result in a cave, a wigwam or a round snow-house according to the season and environment and they are given the story of the people who lived and worked under similar conditions as, the cave men, Indians or Eskimos. Thus during the year the children begin to discover how environment influences the work and habits of a people, and how environment may be overcome. The real motive of this line of work is to cultivate unconsciously and gradually in the children a wholesome sympathy and a comprehension of the rights and difficulties of other people, which shall not only make the history work valuable to them as *knowledge* but be more truly educative as an influence guiding daily action.

4. Selected nature myths, fables, fairy stories, poems and songs.

Through these the children are directed in their own world—a world of personification, fancy and rhythm. We can only refer to these stories under the heading of:—

II. ADAPTATION OF STORIES.

The poets have, in many cases, adapted stories and given us ideas, nature observations, and truth in such simple and beautiful forms that our crude touch only mars them, and whenever it is possible to use it, the rhythm of the original always adds to the pleasure and value of the story. For example, in Longfellow's "The Birds of Killingworth" and "The Emperor's Bird's-Nest;" Whittier's "How the Robin's Breast Became Red" and "King Solomon and the Ants;" Lowell's "Rhoecus" and "The Finding of the Lyre;" the Carys' "The Legend of the Northland" and "Peter at the Dyke;" Browning's "The Cricket and the Poet" and "Two Poets at Avon;" Lanier's "The Song of the Chattahoochee;" Saxe's "Robert Bruce and the Spider" and "King Solomon and the Bees;" Edwin Arnold's "How the Chipmunk got its Stripes" and "The Grateful Foxes."

And in many other poems we find the stories quite ready-made for our use with little children, yet there is much that they should have which is not so well adapted in form. The teacher should be able to go to every great artist and storehouse of beauty and truth, and select out and bring to the children that part of their inheritance which they are fitted to receive. She has *no right to change the treasure in its spirit*, but it is her privilege and responsibility to decide what they can appreciate—what she must omit and what emphasize.

For example, a little boy in the first grade once told the story of "Pearl-Feather" as follows:

One Version of the Pearl-Feather Story.

"Once there was an Indian boy and his grandmother told him that there was a wicked giant called Pearl-Feather, and he must go and kill him. So he sailed away and came to the hissing serpents, and they told him to go back, but he killed them all and the water was all bloody and then he came to Pearl-Feather and fought him all day, until at last he shot him in the head and

then he put his blood upon the woodpecker's head, and made that bird red headed."

All this was certainly in the original story; revenge, bloodshed, etc., but when it was so emphasized that this was all the child remembered, the influence was surely not desirable.

Suppose the story had been given from another standpoint which is equally true to the original.

Another Version of the Pearl-Feather Story.

"Once there was an Indian boy named Hiawatha. One evening his grandmother led him to the great sea water. She pointed eastward to a marshy island and said—'Hiawatha, you are now old enough and strong enough to help your people. Upon that island lives a cruel giant called Pearl-Feather and in the spring time he breathes out poison, and many people die each year. You must save your people from him—you must slay the giant.'

So Hiawatha sailed away with his mittens and his arrows and soon he came to the black pitch-water and loud voices said—'Go back, coward, go back, faint-heart, go back to your people!' But Hiawatha sailed right on, then he came to the hissing serpents and again the voices said—'Go back, coward, go back faint-heart, go back to your people!'—But Hiawatha sailed right on! At last he came to the island and the great Pearl-Feather rose up to meet him. When he saw him he laughed and said—'Go back boy, go back faint-heart, go back to your people!' But Hiawatha said—'I have come to save my people.' So all day long the contest lasted until at length Hiawatha had but one arrow left and it was broken. Just then Hiawatha heard a bird sing, and whenever Hiawatha heard a bird sing, he listened. Then the bird told him how to aim his arrow and the great giant fell to the earth, dead. Then Hiawatha knew that his people were saved, and he called the bird to him and stained its head red with the giant's blood.

Then he sailed home, and when the people saw him coming they made a great feast in his honor and praised him, and offered him gifts. But Hiawatha said: 'I could not have done it alone—the woodpecker helped me. I stained his head red with the giants' blood and shall always wear two of his feathers in my pipe of peace.'"

This is the Indian story of how the woodpecker got his red head, and why they always called him "friend" and protected him from harm. This is the same story with the emphasis placed upon the motive for the action, and upon the courage and gratitude of Hiawatha. Many teachers are disturbed when the children ask at the end of such a story, "Is it true?"

There is only one way of meeting such a question, that is with the simple truth. There must be some truth in the story if it is worthy of telling. The teacher should know what that truth is, before she attempts to tell the story. She would probably say in this case "Perhaps Hiawatha never lived but many Indians have been as brave as he was, and, it is true that it would be a fine thing if a boy could be that brave, isn't it. It is true that it was the right thing for him to remember that the bird helped him, and that he did not take all the praise for himself, isn't it?" I should not force these influences upon the children unless the question were asked, but if the motive for telling the story is *clear in the teacher's mind*, this question will always enhance rather than detract from the real value of the story.

Our best aid in the adaptation of stories has come to us from the children in the following manner:

It is a custom in our primary school to have a so called party for twenty minutes each day. During this time some group in the room is responsible for the entertainment of the other children. They may sing a song, tell or act out a story, or play a game but once during the week each child feels it his duty to see that every one enjoys himself. All depend upon him, and he cannot disappoint them. This is not only an excellent way to bring out the best in timid children who often need encouragement and outside help but through the stories selected we get at the independent taste of the different individuals.

The stories selected are not always the best, but by keeping a list of them from year to year and carefully analyzing them we are able, in almost every instance, to determine the reason for the choice and profit by it in our own selection of stories.

Strong action, vivid contrasts, musical or loud sounds, the rhythm of repetition, and personal experience were the normal or average key notes of interest.

With these facts, and knowing the influence which we wished the children to receive, we have gone to all sources—to man, mythology and the Bible, and have sought and found without difficulty just the ideas or deeds needed for immediate use. With these points in mind the adaptation takes care of itself and the oldest story becomes fresh and attractive.

MATHEMATICS.

EDITED BY

ROBERT J. ALEY, Ph. D., Bloomington, Indiana.

HISTORY OF ARITHMETIC.

XXII. BOOKS ON HISTORY, PHILOSOPHY AND PEDAGOGY OF ARITHMETIC.

Brooks, Edward. *The Philosophy of Arithmetic* as developed from the three fundamental processes of synthesis, analysis, and comparison containing also a history of arithmetic. Lancaster, Pa., Normal Publishing Company. 1880.

Byrne, Oliver. *Dual Arithmetic. A New Art.* London. Bell & Daldy, 186 Fleet Street. 1864. (Out of print.)

Conant, Levi Leonard. *The Number Concept its Origin and Development.* New York. Macmillan & Co., 1896. A remarkably interesting and instructive treatment of the subject.

Davis, Charles. *The Logic and Utility of Mathematics*, with the best methods of instruction explained and illustrated. New York. A. S. Barnes & Burr. 1865. (Out of print.)

De Morgan, Augustus. *The Elements of Arithmetic.* London. John Taylor. 1835. (Out of print.)

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De Morgan, Augustus. *On the Study and Difficulties of Mathematics.* New Edition. Chicago. The Open Court Publishing Company. 1898.

Finkel, B. F. *A Mathematical Solution Book*, containing systematic solutions, etc., with notes and explanations. Kidder, Mo. Kibler, Cokely & Company. 1888.

Greenwood, J. M. *A Complete Manual on Teaching Arithmetic, Algebra and Geometry*, including a brief history of these branches. New York. Effingham, Maynard & Co. 1890.

Harwood, Samuel E. *Notes on Method in Arithmetic.* Terre Haute. The Inland Publishing Company. 1897.

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Hewett, Edwin C. *A Manual of Arithmetic*, containing instructions for the mastery of its theory and practice. Chicago. Rand, McNally & Company. 1896.

Lagrange, Joseph Louis. *Lectures on Elementary Mathematics*, translated by T. J. McCormack. Chicago. The Open Court Publishing Company. 1898.

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Leferre, Arthur. *Number and its Algebra.* Boston. D. C. Heath & Co. 1896.

McClellan, James A. & Dewy, John. *The Psychology of Number* and its applications to the methods of teaching arithmetic. New York. D. Appleton & Co. 1895.

Nichols, Herbert. *Our Notions of Number and Space.* Boston. Ginn & Company. 1894.

Olney, Edward. *The Science of Arithmetic.* New York. Sheldon & Company. 1882.

Park, Uriah. *Lectures on the Philosophy of Arithmetic* and the adaptation of that science to the business purposes of life. Philadelphia. Moss & Company. 1867. (Out of print.)

Schubert, Hermann. *Mathematical Essays and Recreations.* From the German, by T. J. McCormack. Chicago. The Open Court Publishing Company. 1898.

Smith, David Eugene. *The Teaching of Elementary Mathematics.* New York. McMillan & Company. 1900.

Sonnenschein, A. and Nesbitt, H. A. *The New Science and Art of Arithmetic.* London. Swan Sonnenschein & Company, Limited. 1899.

Showalter, J. B. F. *Arithmetical Reference and Solution Book.* Valparaiso. J. B. F. Showalter. 1897.

Walsh, John H. *A Manual of Teachers.* Boston. D. C. Heath & Company. 1897.

SHORT CUTS.—VI.

MULTIPLICATION.—(Concluded).

21. To square any number of 9's.

Write down as many 9's less one as there are 9's in the given number, an 8, as many 0's as 9's, and a 1.

$$9999^2 = 99980001.$$

The reason for this method is easily found. It might be shown thus:

$$9999^2 = 9999 \times 10000 - 9999.$$

22. To multiply by *quarter squares.*

An example or two will show the method.

$$15\times11=\left(\frac{15+11}{2}\right)^2-\left(\frac{15-11}{2}\right)^2=165$$

$$24\times16=\left(\frac{24+16}{2}\right)^2-\left(\frac{24-16}{2}\right)^2=384$$

This method was invented by the Arabs. When the sums and differences are numbers which can be easily squared, the method has some advantages.

The explanation is found in the following algebraic identity:

$$xy=\left(\frac{x+y}{2}\right)^2-\left(\frac{x-y}{2}\right)^2=\frac{x^2+2xy+y^2-x^2+2xy+y}{4}=xy.$$

A list of problems in *Short Cuts*.

1. 96×75
2. $248\times12\frac{1}{2}$
3. 81×91
4. 185^2
5. 925^2
6. 874×11
7. 965×111
8. 63×67
9. 65×85
10. 8796×99
11. 456×79
12. 34×36
13. 94×96
14. $(3.6597)^2$ to 3 decimals
15. $(999999)^2$.

SOLUTIONS.

7. No correct solution received to this problem. Will not some one solve it?

8. (a) Three equal circles touch each other and enclose one acre. What is the diameter of one of the equal cirles?

Let 1 rd. = the diameter of each circle.

$1^2\times.7854=.7854$=area of each circle.

½ of $.7854=.3927=\frac{1}{2}$ area of each circle.

1 rd. = the side of the equilateral triangle formed by joining their centers.

$.5\sqrt{3}$ =altitude of the equilateral triangle formed by joining their centers.

$.25\sqrt{3}=\sqrt{.1875}$=area of the equilateral triangle formed by joining their centers.

$\sqrt{.1875}-.3927=.0408$=space between the circles.

$\sqrt{160+.0403}=63.0097+$ =ratio of increase.

1 rd. $\times63.0097+$ $=63.0097$ rds. = diameter of each circle.

—JOHN MORROW, Charlestown, Ind.

(b) $\sqrt{3}\,r^2$=triangle formed by connecting the centers of the circles.

$\sqrt{3}\,r-\pi\frac{r^2}{2}=160$ sq. rd.=space enclosed.

$2\sqrt{3}\,r^2-\pi r^2=320$ sq. rd.

$3.462r^2-3.1416r^2=320$ sq. rd.

$.322r^2=320.$

$r^2=1000.$

$r=31.62$ and $2r=63.24$ rds.=diameter.

—JAMES B. MURPHY, Georgetown.

9. A field is 40×80 rds. How wide a strip must be plowed around the field to contain half its area?

80 rds. $\times$ 40 rds. =3200 sq. rds.

3200 square rds. $\div$ 160= 20 acres area of field ABCD.

$\frac{20}{2}$=10 acres area of unplowed land or field EFGH.

Similar surfaces are to each other as squares of like lines.

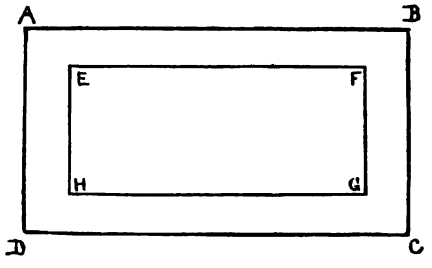
$\therefore$ $3200:1600::40^2:800.$

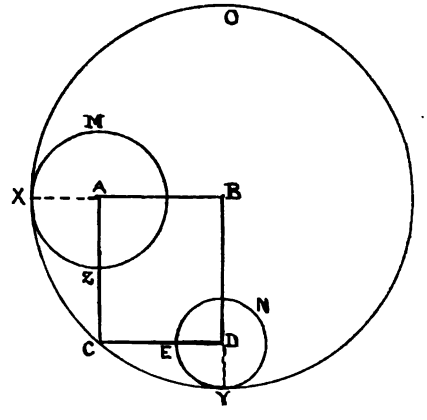
$\sqrt{800}=28.28+$rds. Length of FG.

40 rds. or BC—28.28+rds=11.71+rds. or twice width of plowed land.

$\frac{11.71+}{2}=5.85+$rds. width of plowed strip.

—WILL N. LONG, Wanatah Ind.





10. Example 100, p. 197.

Formula πR^2=Area.

ABCD represents the barn. AB=30 ft. and BD=40 ft. Let the horse be tied at B. BY=50 ft., the length of the rope. With a radius of BY construct the circle O with B as a center. Now the horse will graze to points A and D, when the corners of the barn will act as new centers to two new circles at A and D. XB=50 ft; AB=30 ft., when $\overline{XB}-\overline{AB}=20$ ft., or XA. BY=50 ft.; BD=40 ft., when $\overline{BY}-\overline{BD}=10$ ft., or

DY. Using A as a center with AX as radius construct M. Then the horse will graze over XAZ, or ¼ of M. Using D as a center and DY as radius construct N. The horse will also graze over EDY, or ¼ of N. The horse will also graze over XBY, or ¾ of circle O. Find the area of these circles.

$\pi 50^2 = 7857\frac{1}{4}$ sq. ft., area of circle

O. Then ¾ of circle O = 5893 sq. ft.

$\pi 20^2 = 1257\frac{1}{4}$ sq. ft., area of circle

M. Then ¼ of circle M = $314\frac{1}{4}$ sq. ft.

$\pi 10^2 = 314\frac{1}{4}$ sq. ft., area of circle

N. Then ¼ of circle N = $78\frac{1}{4}$ sq. ft.

Amt. grazed over = 6286 sq. ft.

I. $\frac{6289}{9} = 698.5$ sq. yd.

II. $\frac{698.5}{30\frac{1}{4}} = 23.1$ sq. rd.

III. $\frac{23.1 \times 10}{160 \times 10} = \frac{231}{1600} = \frac{1}{7}-$ or $\frac{1}{7}+$.

The area lies between the two.

—M. E. COLE, Sulphur Hill, Ind.

11. Problem 8, page 247.

Int. on \$625 for 9 mo. @ 6% = \$28.125

Int. on \$156.25 for 6 mo. @ 6% = 4.6875

Int. on \$117.1875 for 3 mo. @ 6% = 1.7578125

Total Int \$34.5703125

The balance due is \$851.5625; the interest on this sum for 1 mo. @ 6% = \$1.7578125.

Then \$34.5703125 + \$1.7578125 = 19⅔ mo., or 19 mo. and 20 d.

—JOHN S. WILLIAMS, Mt. Vernon.

12. No. 8, page 298, C. and C.

By the conditions of this problem we see that the sum of the debt after the payment is to run 6 mo., and the interest on that sum must not exceed \$24; hence we have the following: assume money at 6%.

Int. on \$1200 @ 6% for 4 mo. = \$24.

Int. on \$1 @ 6% for 6 mo. = 3c.

∴ for every 3c. of Int. we have \$1 of debt.

∴ we will have as many dollars of debt as \$24 is divisible by .03 = \$800, the sum yet due.

\$1200—\$800, or \$400 the payment.

—E. E. LUCAS, Petersburg.

CREDITS.

James B. Murphy, Georgetown, 8, 9, 10, 11, 12; H. A. Blunk, Crown Center, 8; P. N. Magers, Woodburn, 8; G. W. Coleman, Woodburn, 8; Will N. Long, Wanatah, 9, 10; M. E. Cole, Sulphur Hill, 10, 11, 12; John Morrow, Charlestown, 8, 9, 10, 11, 12; Colonel Sentman, Veedersburg, 8, 9; John R. Stahl, Cayuga, 10; F. D. Huff, Argos, 10; John S. Williams, Mt. Vernon, 10, 11, 12; Edw. J. Metz, Columbia City, 10, 11; E. B. Scott, Bluffton, 9, 10, 11, 12; Harry Wright, Russiaville, 10; George F. Leonard, Russiaville, 10; John C. Magley, jr., Monmouth, 10; Harry R. Yohey, Eaton, 10; Carson M. Surfus, 10; E. E. Lucas, Petersburg, 11, 12.

SOLUTIONS REQUESTED.

18. "A teacher amuses six of his pupils by laying off a triangular space on level ground, sides 231, 250, and 289 ft. respectively. He stands at the center, each of the three girls on a side equidistant from a boy on each corner, how far is he from a girl and each of the three boys?" From Rogers' Mental Arithmetic.

19. I can buy 10-year 5% bonds at 120 or 10-year 3% bonds at par. Suppose the interest payable semi-annually, and that I immediately loan it at 5% simple interest. I have \$1200 to invest. Which is the better investment and how much better?

20. The diameter of a circle is 4½ in. What is the side of the largest equilateral triangle that can be placed in the circle?

21. Solve problem 8, page 167.

NOTES.

Send all solutions, questions and notes for the Mathematical Department to Robert J. Aley, 203 Forest Place, Bloomington, Indiana.

A number of most excellent solutions have been received from pupils in the grades. Robert E. Lind of Sanford sends an excellent solution to problem 6, page 247. Also little Harry Yohey of Shideler sends another excellent solution. The editor is glad to receive such solutions.

The list of books on the history, philosophy and pedagogy of arithmetic makes no pretension to completeness. The editor would greatly appreciate any information that would enable him to add other desirable books to the list.

Mr. David A. Rothrock has recently been promoted to an associate professorship in mathematics at Indiana university.

Mr. Morton C. Bradley, a graduate student at Indiana university, has been appointed a fellow in mathematics at the University of Chicago. He is the first I. U. man to receive a mathematical fellowship at Chicago.

SPECIAL DAYS.

WE give this month two skeleton programs which may prove suggestive, one for "Memorial Day" and one for celebrating the season of new life. As we have heretofore stated we believe these celebrations should be conducted in such a spirit that they will not only be enjoyable, furnishing entertainment for all concerned, but that they will be made occasions for bringing the pupils into touch with many standard pieces of literature treating some phase of the subject under consideration. It is thus advisable to have all the exercises on Memorial Day tinged with the solemn joy and sorrow which belong to the occasion. We get so enthusiastic over fire-crackers sometimes that we lose sight of the real Fourth of July; the Easter rabbit may crowd out of mind the risen Saviour, while Santa Claus and the suspense incident to his coming may be emphasized at the expense of "peace on earth, good will to men." The exercises in connection with the Spring season itself should be full of a lightness and airiness in keeping with the zephyrs themselves. Almost any collection of songs for the use of schools will contain appropriate selections for filling out the program. Bardeen's *Song Budget Series* (C. W. Bardeen, Syracuse, N. Y.), Adams' *Music for the Common Schools* (Inland Pub. Co., Terre Haute, Ind.) and Mathews' *Songs of All Lands* (American Book Co., Cincinnati, O.) are suggested as suitable for this purpose. For recitations and special programs the series published by E. L. Kellogg & Co., New York, and the various collections published by the Penn Publishing Co., Philadelphia, are recommended. Send for their catalogues.

C. M. C.

MEMORIAL DAY.

(Some of the songs used for the program which appeared in the February EDUCATOR may be used in this program.)

1. Song: America.
2. Reading from scriptures,
3. The origin and significance of memorial day. (Essay by pupil or talk by teacher or invited speaker.)
4. Song: Star Spangled Banner.
5. Recitations: The Blue and the Gray (Finch), How Sleep the Brave (Collins).
6. Song: Tenting on the Old Camp Ground.
7. Recitations: A Song of the Camp (Taylor), The American Flag (Drake).
8. Song.
9. Essay: The Battle of Gettysburg.
10. Declamation: Killed at the Ford (Longfellow).
11. Song.
12. Reading: "We Sit here in the Promised Land." (From Lowell's Commemoration Ode.)
13. Recitations: The Brave at Home (Read), Nathan Hale (Finch).
14. Song.
15. Recitations: A Monument for the Soldiers, Old Glory, The Old Man and Jim. (Riley).
16. Song.
17. Cover them Over (Carleton), Driving Home the Cows (Kate Putnam Osgood).
20. Closing Song: America.

SELECTIONS SUITABLE FOR A SPRING CELEBRATION.

The Forest Trees (Eliza Cook).
A Forest Hymn (Bryant).
The Pebble and the Acorn (Hannah F. Gould).
Planting of the Apple Tree (Bryant).
Plant a Tree (Lucy Larcom).
The Voice of the Grass (Sarah Roberts).
The Awakening Year (Read).
Jack-in-the-Pulpit (Whittier).
The Ivy Green (Dickens).
"When the Green Gits Back in the Trees" (Riley).
A Dream of Summer (Whittier).
To a Dandelion (Lowell).
The Oak (Lowell).
"What is so rare as a day in June." (From Lowell's Vision of Sir Launfal.)

TO THE FLOWERS.

Ye are the scriptures of the earth,
Sweet flowers fair and frail;
A sermon speaks in every bud
That wooes the summer gale.
Ye lift your heads at early morn,
To greet the sunny ray,
And cast your fragrance forth to praise
The Lord of night and day.

Sown in the damp and cheerless earth,
Ye slumber for a while,
Then waken into glorious life
And bid creation smile.

Thus, when within the darksome tomb
Our mortal frame shall lie,
The soul, freed from the bonds of sin,
Shall join the choir on high.

ROBIN'S SHORTCAKE.

Robin is out in the strawberry-patch;
Little lips and fat fingers the berries just match
He's busily, busily picking, you see,
For Grandma has promised him shortcake for tea.

His big "farmer hat" lies close at his side;
To fill it for over an hour he's tried,
But so many berries got lost on their way—
Now *where* could they ever have gotten to, pray?

Grandma's been beating the light, creamy cake,
And now in the oven it's ready to bake,
As a queer little figure appears in the door,
Hugging his hat to his brown pinafore.
Berry-stained he from his crown to his toes,
Especially rosy his dear little nose.
Out on the table he rolls all his store
Of juicy, crushed berries—a handful, not more.

"Why Robin," laughs Grandma, "those berries will make
For your tea such a very a *very* 'short' cake!"
"Well, I fink I don't feel bery hungry for tea,
'Cause I tasted 'em while I was picking, you see.

"But if I eat *quick*, Grandma, some of that cake,
My bery own shortcake I fink I can make.
For the cake will catch up wif the berries, you see,—
Then there's *strawberry shortcake* right inside o' *me!*"

—*Marie Golden, in the Outlook.*

SPRING.

Dip down upon the northern shore,
O sweet new-year, delaying long;
Thou doest expectant Nature wrong;
Delaying long, delay no more.

What stays thee from the clouded noons,
Thy sweetness from its proper place?
Can trouble live with April days,
Or sadness in the summer moons?

Bring orchis, bring the foxglove spire,
The little speedwell's darling blue,
Deep tulips dashed with fiery dew,
Laburnum's dropping-wells of fire.

Oh thou, new-year, delaying long,
Delayest the sorrow in my blood,
That longs to burst a frozen bud,
And flood a fresher throat with song.

.

Now rings the woodland loud and long,
The distance takes a lovlier hue,
And drowned in yonder living blue
The lark becomes a sightless song.

Now dance the lights on lawn and lea,
The flocks are whiter down the vale,
And milkier every milky sail
On winding stream or distant sea;

Where now the sew-mew pipes, or dives
In yonder greening gleam, and fly
The happy birds, that change their sky
To build and brood, that live their lives

From land to land; and in my breast
Spring wakens too; and my regret
Becomes an April violet,
And buds and blossoms like the rest.

—*Alfred Tennyson.*

HULLO.

W'en you see a man in woe
Walk right up and say "Hullo!"
Say "Hullo" and "How d'ye do?
How's the world a-usin' you?"
Slap the fellow on the back;
Bring your hand down with a whack.
Walk right up, and don't go slow;
Grin an' shake, an' say "Hullo!"

Is he clothed in rags? Oh, sho;
Walk right up an' say "Hullo!"
Rags is but a cotton roll
Jest fer wrappin' up a soul;
An' a soul is worth a true,
Hale and hearty "How d'ye do?"
Don't wait for the crowd to go,
Walk right up and say "Hullo!"

When big vessels meet, they say
They saloot an' sail away.
Jest the same are you an' me
Lonesome ships upon a sea:
Each one sailin' his own log,
For a port behind the fog.
Let your speakin'-trumpet blow;
Lift your horn and cry "Hullo!"

Say "Hullo!" and "How d'ye do!"
Other folks are good as you.
W'en you leave your house of clay
Wanderin' in the far away,
W'en you travel through the strange
Country t'other side the range,
Then the souls you've cheered will know
Who you be, an' say "Hullo."

—*S. W. Foss.*

NATURE'S MIRACLE.

He who loves not a noble tree
No fellowship may claim from me.

Deep in the earth its great roots spread,
But heaven's own blue surrounds its head.

It holds the joy of summer's morn,
Of strength of winter's wildness born.

God's birds find shelter in its arms,
Secure from everything that harms.

It bows when south winds wander past,
But breasts unmoved the fiercest blast.

'Tis Nature's miracle to me,
Her fairest work—a noble tree.

—*Ninette M. Lowater, in N. Y. Sun.*

PRACTICING SONG.

[Piano left side of stage, side to audience.]

Ri tum tiddy-iddy, ri tum tum! [*Little girl runs in, singing.*]

Here I must sit for an hour and strum. [*Flings herself on the piano stool.*]

Practice is the thing for a good little girl. [*Plays a scale.*]

It makes her nose straight [*turns cutely round on stool and, glancing at audience, feels of her nose*] and it makes her hair curl. [*Twists her hair around her finger, smiling roguishly.*]

Ri tum tiddy-iddy, ri tum ti! [*Sings as she turns around to the piano again.*]

Bang on the low notes [*strikes heavily on some low notes*] and twiddle on the high;

Whether it's a jig [*plays jig music*] or the Dead March in "Saul." [*Plays some of the Dead March in "Saul."*]

I sometimes feel as if I didn't care at all. [*Tosses head back in an indifferent manner, swings around on stool, looks at audience in a very pert manner, and then acts as though listening, turns back again quickly, singing as she turns:*]

Ri tum tiddy-iddy, ri tum te! [*Strikes some notes on the piano not in keeping with the time in which she is singing.*]

I don't mind the whole or the half notes, you see. [*As she says this she swings round to the audience again.*]

It's the sixteenth and the quarter that confuse my mother's daughter,

And a thirty-second [*strikes it on the piano, then nods her head*] is too dreadful to be taught her.

Ri tum tiddy-iddy, ri tum to! [*Singing as she plays a new scale.*]

I shall never, never learn [*looks at audience and then back at the piano, plays a minor scale badly*] the minor scale I know [*shaking her head*];

It's gloomier [*plays badly*] and awfuller than puppy dogs a-howling [*swings round as she talks and tells it to the audience.*]

And what's the use of practicing such melancholy yowl-ing? [*Drawls, as she swings around on her stool again.*]

But ri tum tiddy-iddy, ri tum tum! [*Plays hard and earnestly.*]

Still I work away with my drum—drum—drum [*drums loud and long*]—

For practicing is good [*swings around again and, pointing at herself and tossing back her head, then jumps off the stool*] for a good little girl;

It makes her nose straight [*shakes head at the audience and feels of nose from top down*] and it makes her hair curl. [*Bows deeply as she twists her hair around her finger, looks coquettish and runs off stage.*].

(As arranged in *Werner's Magazine.*)

RETURN OF SPRING.

The Time hath laid his mantle by
Of wind and rain and icy chill,
And dons a rich embroidery
Of sunlight poured on lake and hill.
No beast or bird in earth or sky,
Whose voice does not with gladness thrill
For Time hath laid his mantle by
Of wind and rain and icy chill.

River and fountain, brook and rill,
Bespangled o'er with livery gay
Of silver droplets, wind their way.
All in their new apparel vie,
For Time hath laid his mantle by.

—*Chas. of Orleans.*

MAY DAY.

April's gone, the king of showers;
May is come, the queen of flowers;
Give me something, children dear,
For a blessing on the year.
For my garland give, I pray
Words and smiles of cheerful May,
Birds of spring, to you we come,
Let us pick a little crumb.

—*John Keble.*

NATIONAL HEBBART SOCIETY.

The National Herbart Society is being reorganized, and for this reason the publication of the next Year Book of the society will probably be postponed until the reorganization is effected. The following are some of the features under consideration:

1. Purpose: The scientific study of education.

2. Active Membership: A relatively small number of active members, who shall elect the officers and conduct the business of the society. The chief qualification for active membership shall be the possession of time, ability and inclination to undertake serious scientific study of educational problems.

3. Associate Membership: A large number of associate members, organized whenever practicable into study clubs, who, upon the payment of a small annual fee shall be entitled to receive the publications of the society and to attend all its meetings.

4. Publications: The publication, in yearbooks and supplements, of the result of scientific study by the active and associate members, when approved by a committee on publication appointed by the active members.

5. Self-Election to Active Membership: An arrangement whereby an associate member may become an active member when there is a vacancy by tendering to the society for publication a dissertation showing adequate study of some problem in education.

CHARLES DE GARMO, President.

SELF-GOVERNMENT FOR PUPILS.

From the many articles recently written upon order in the schoolroom and self government among pupils, teachers are evidently still trying to conquer the question of discipline. It may therefore be of interest to some, at least, to learn what is being done in self-government among the pupils of a district school in Madison county, Indiana.

The school is one of about fifty pupils ranging in age from six to eighteen years. It is supplied with a library of about sixty volumes of the Y. P. R. C. books, and three journals for young people. Free access to these books and journals is given at all times, save when a class is reciting.

Each pupil is expected to keep busily engaged at some useful work, and to avoid all whispering and undue disturbance. When a pupil has succeeded in doing this for one day, he is given a small red ribbon bow. This he wears as a "badge of honor." If he continues this "perfect" conduct for one week, he is given a white ribbon bow which he also wears. If this white bow is worn for three weeks, making a total of four weeks of "perfect" conduct, he is given a bow of red, white, and blue ribbon. This signifies that he is a pupil of the highest moral standing.

If at any time, a pupil is adjudged of having been guilty of conduct unbecoming him and the school, he forfeits his "badges of honor," in the order in which he has received them; viz., the red ribbon for the first offense, the white for the second, etc. The badges forfeited may be reclaimed in the same manner as they were first obtained.

When accused of a misdemeanor, pupils are given opportunity to "plead guilty" or "explain," and all questions of right or wrong conduct are decided by the eighth grade, of which there are seven members.

This plan has worked so successfully in this school that all but two children (both six-year-olds) are now wearing the red, white and blue bows, and the teacher has little left to think about in the matter of discipline. Even his absence from the room does not seem in any way to change the conduct of the pupils. They take very great pride in their "perfect" conduct, and a trespasser is looked upon, even by very small pupils, as a criminal and "weak pupil."

R. J. DEARBORN.

AN INTERESTING SERIES OF PICTURES.

For many years past the firm of Harper & Bros. have in the publication of their various books and magazines gotten together a collection of pictures which are unequalled for their artistic merit. No expense has been spared in employing the greatest wood-engravers, steel-engravers, and artists of both Europe and America. As each publication has been printed these plates have been laid aside in their vaults, and to-day this series of plates is the most varied of its kind in existence; works on history, architecture, painting, sculpture, biblical history, and an endless series of other publications being included in their lists.

For the first time this year The Helman-Taylor Art Company of New York City has undertaken to systematize this vast material into a series of pictures which may be used by the educational institutions of the country. They have taken these plates and chosen from the many thousands 1,600 subjects which will be printed in a size approximately 4x5 inches on the best of

paper, about 7x9 inches; and being taken from these blocks, in many cases wood engravings of the finest order, they are equal to the finest prints made by hand.

The catalogue which will be issued in a short time will contain fifty pages, being illustrated with sixteen of the most interesting of these pictures, and will be sent upon receipt of 5c in stamps. This catalogue is very interestingly divided, each section being devoted to one particular subject, and much information concerning the artist or the place is given in connection with the subject itself.

The following are the divisions: Architecture. Historical Subjects. Meteorology. Music. Natural History. Paintings. Portraits, (Actors, Artists, Authors, Explorers, Generals, Musicians, Royalties, Scientists, Statesmen, Miscellaneous.) Places connected with Celebrated People. Religious Subjects. Sculpture. Views, Geographical and Illustrative. Washington, Subjects connected with the life of George.

AMONG THE NEW BOOKS.

There would seem to be a place for the kind of book that Professor Reuben Post Halleck gives us in his *History of English Literature*, for almost every intelligent person in these days is expected to know something about the history and movement of his own literature, while only a few have the leisure to make the comparative studies that give them at first hand a knowledge of the general drift of literary thought at any period. Professor Halleck's view embraces the whole movement of English literature from its beginning to the present time. The treatment is philosophic, but yet simple. It is less the biography of an author than the attempt to see the relation of his work to the age in which he lived. At the close of each chapter there is an extended table of suggested readings and references for further study. As a comprehensive, simple view of the development of English literature the book will be found very satisfactory. A novel and useful feature is a map of England and Scotland with names of authors marked by their native towns. [American Book Co., 499 pages, illustrated, $1.25.]

Three famous novels with historical settings have been edited and somewhat abridged for school use. These are Scott's *Quentin Durward*, Scott's *Talisman*, and Dickens's *Tale of Two Cities*. The first has particular value as giving a clear impression of the age of chivalry when it was in its decline. It is a companion story to "The Last of the Barons." The second story deals with one of Scott's favorite subjects, the Crusades. No mere history of that period so well portrays the life and conditions of this romantic movement. The other volume is well known as one of Dickens's best stories, and as presenting a vivid picture of the stirring times of the French Revolution. Being also one of his shorter stories the abridgment is insignificant. These three volumes will make desirable additions to school libraries that are not already supplied. In size they run about 300 pages. [American Book Company. 50 cents each.]

In the "Four Great Americans" series, the latest volume, entitled *Great American Educators*, appeals to teachers in a direct way that none of the earlier volumes has. To say that it is written by Dr. A. E. Winship is to promise the reader of the book a delightful style and a sympathetic appreciation of what the great men and women have done for education in America. If the subject matter is simple enough for seventh and eighth grade pupils it is at the same time a delightful review of educational history that will please and profit every reader. The volume contains the life stories, with portraits, of Horace Mann, Mary Lyon, David P. Page, Henry Barnard, John D. Philbrick, Newton Bateman, E. A. Sheldon, Jas. P. Wickersham, John Harvard, Mark Hopkins, Frederick A. P. Barnard, and Chas. G. Finney. [Werner School Book Co., Chicago, 252 pages, 50 cents.]

"To study methodically the texts of a few representative authors, and not merely to read about many authors, to study what great authors have written and not what some one has written about them" is Dr. A. F. Blaisdell's plan and purpose in the revised edition of his *First Steps with American and British Authors*. To suggest at least one good way of doing this he uses "The Wreck of the Hesperus," "The Norman Baron" and "The Lord of Burleigh" as models. He then gives outlines both for the study of a prose selection and for a course of study in English literature. There are representative selections from representative authors sufficient to occupy a class for one year. A valuable set of notes at the back will be found useful. Both in plan and material the book is to be much commended. [American Book Co., 442 pages, 90 cents.]

Mr. W. S. B. Mathews has collected a large number of patriotic and national songs of many countries together with numerous folk songs. There are about a hundred songs in all. The ti-

tle is *Songs of all Lands*, properly suggesting the fact that the collection includes the national airs of various countries besides our own. There are also many favorite hymns and songs such as "Abide With Me," "Annie Laurie," "Auld Lang Syne," "Hazel Dell," "My Old Kentucky Home," "Old Folks at Home," "O Paradise," etc., which help make the collection well suited for use in schools and at social gatherings. The page is quarto. The music is in three and four parts, and many of the pieces have piano accompaniments. [American Book Co., 157 pages, 50 cents.]

Big People and Little People of Other Lands is the title of an excellent collection of narrative and descriptive stories by Edward R. Shaw of New York University. In a clear and easy style it portrays the homes, habits and traits of the people of China, Japan, Arabia, Korea, India, Lapland, Greenland, Russia, Switzerland, Holland, Patagonia, and the Philippines. There are also sketches about the Pygmies and the Indians. This little book is well designed to gratify the natural childish desire to know about strange lands and strange people, and the impressions made in reading them will stimulate the desire to know more. [The American Book Co., 128 pages, illustrated. 30 cents.]

A little book on *Exercises in Mind-Training* has been prepared by Miss Catherine Aiken. The exercises, being those with which she has attained such marked success in her own school, consist of drill in combining numbers after only a momentary view, practice in reproducing geometrical and other figures, memorizing of literary selections, and so forth. The most casual review of the book shows that a few minutes each day devoted to such practice will help the student to concentrate attention, observe closely, calculate quickly, strengthen memory, and so gain power in the doing of his other school work. [American Book Co., 122 pages, $1.00.]

Professor Edward M. Lancaster has revised his *Manual of English History* bringing it down to date, including the commencement of the Boer war. In the brief space of 334 pages hardly more than the mere outlines of over ten centuries of history can be given. This, however, has been well done, and, so far as the limited scope allows, cause and effect in the historical development are duly considered. In schools where the course of study is not extended this comprehensive presentation of the essentials will be especially acceptable. The maps, several in number, are remarkably clear. [American Book Co., 334 pages, $1.00.]

The use of illustration in primary reading books has reached a fine art. The rich colors of flowers and birds are reproduced with the finest artistic effects attainable, while half-tones and other processes are used in lavish abundance. A fine example of such excellence is found in *First Days in School*, by Seth T. Stewart and Ida Coe. It is a beginning book, in which the apt illustrations are the key to words and phrases. [American Book Company., 92 pages, 25 cents.]

Among the books which were recently sold by Harper & Brothers is *A Smaller History of Rome* by Sir William Smith. The present revision by A. H. J. Greenidge will increase the popularity which the book had already acquired. The period covered is from 753 B. C. to the death of Trajan, 117 A. D. The text with marginal notes, the index, the maps, and the illustrations are all that could be desired. [American Book Co., 371 pages, $1.00.]

Charlotte Porter and Helen A. Clarke, the editors of *Poet Lore*, have collected into book form their *Browning Study Programmes*. If the study of Browning is not so much a fad as it was when Canon Farrar was in America lecturing on his friend the poet it is yet true that there is and always will be a considerable class who will study Browning carefully. If he is not popular in the ordinary sense, the conviction that no other poet better repays study insures a steady interest and a healthy growth. In the present study the writers show a rare appreciation and insight into Browning's poetic motive; namely, aspiration. This motive is well pointed out in an extended introduction. Then follow the programs for study in which the poems are grouped under certain heads; as, "Adventure and Heroism," "Folk Poems," Phases of Romantic Love," "Love Lyrics," "Art and the Artist," "Music and Musicians," "Portrayals of National Life," and many "Single Poem Studies." Each program abounds with information, suggestions, helps and hints. Careful students of Browning will find it very valuable. [T. Y. Crowell & Co., 631 pages, $1.50. The same in two 18 mo. volumes uniform with the "Camberwell" edition, $1.50 per set.]

President A. R. Taylor of Emporia, Kansas, has prepared a collection of one minute talks on all sorts of subjects that appeal to the better side of the teacher. He calls the collection

Among Ourselves, with a subtitle, "A Schoolmaster With His Friends at the Round Table." They are confidential talks, inspiration in small doses. It is a little book to pick up for a minute or two, and to read at random. [E. L. Kellogg & Co., 149 pages, 50 cents.]

To show how, "on the basis of the fundamental views of psychology, a doctrine of interest might be established which should be free from contradictions, not only with those psychological premises, but also with itself," is the purpose Dr. Wilhelm Ostermann announces in preparing his *Interest in its Relation to Pedagogy*. The work has been translated under the direction of the New York society for the comparative study of pedagogy, and is edited by Edward R. Shaw. "Origin, Nature and Kinds of Interest," "Significance of Interest in the Acts of Ideation and Reasoning," and "Significance of Interest in Desire and Volition" are the heads under which theory and principles are considered. Then follows a chapter of "Pedagogical Inferences and Applications," which gives the book a practical value. [E. L. Kellogg & Co., 150 pages, $1.00.]

A Woman's Paris.—A handbook of every-day living in the French capital—is a title that will appeal to many a prospective visitor to the great Exposition this summer. Indeed the stories of extortions practiced upon the uninitiated may well cause many of them to hesitate about going. To meet the needs of such, especially of women who may be in Paris some time and without a male escort to advise them, to show how they may live easily, happily and moderately for a transient period during a crowded season, is the purpose of this little volume. A few chapter titles will show its practical character: "Marketing and Meals," "Cabs," "Sight-Seeing," "Churches," "Shops and Money," "Suburban Trips," "French Society," "The Exposition," etc., etc. Some forty well chosen illustrations enliven the pages, and the book accords, in its make-up, with the high standard of its publishers. [Small, Maynard & Co., Boston, 219 pages, $1.25.]

Any book that will help reveal to young people the great wonder-world that existed in the thought and belief of the old Greeks and Romans is worthy of a place in the student's library. One of the latest attempts to systematize such knowledge is called *1000 Mythological Characters*, by Edward S. Ellis. Brief descriptions are given, characters of most importance receiving, of course, the most notice. The names are arranged in alphabetical order, and stand out so clearly on the page that references are made with the least possible time and effort. There are many cross references. The numerous full page representations of great works of art add both interest and value to this handy, condensed classical dictionary. [Hinds and Noble, New York. 146 pages.]

INDIANA STATE BOARD QUESTIONS FOR APRIL, WITH DISCUSSIONS.

PHYSIOLOGY AND SCIENTIFIC TEMPERANCE.

1. What are the great divisions of the nervous system? (*b*) How many pairs of nerves in each?
2. Where are the sebaceous glands, and what are their functions?
3. How is voice produced?
4. Name the secretions of the alimentary canal and the points at which they occur.
5. Why is nitrogenous food a necessity?
6. Describe the pericardium. What is its use?
7. Of what importance is exercise to a healthy condition of the muscles.
8. What are the characteristics of the alcoholic appetite as contrasted with the appetite for foods generally?

1. The great divisions of the nervous system are the cranial division and the spinal division.

(b) There are twelve pairs of cranial nerves and thirty-one pairs of spinal nerves.

2. The sebaceous glands are located in the dermis near hair-folicles. It is their function to secrete an oily material, which serves to moisten the skin and hair.

3. The voice is produced by the vibration of the vocal cords, which are set in motion by expired air.

4. The saliva in the mouth; the gastric juice, in the stomach; the pancreatic juice which is poured into the upper part of the small intestine; the bile from the liver into the upper part of the small intestine; the intestinal juice in the small intestine and the mucous secreted more or less freely along the whole length of the alimentary canal.

5. Because the active, growing, working parts of the body are composed of nitrogenous materials. Because the body is continually throwing off waste nitrogenous matter.

6. The pericardium is a double-walled membrane that surrounds the heart. The inner wall is attached to the heart; the outer is attached to adjacent structures. Between the two walls is a closed cavity which contains a serous fluid. In the movements of the heart the moist smooth surfaces of this serous cavity move over one another, reducing friction to a minimum.

7. Exercise, under favorable conditions, promotes the health of all the tissues of the body. It quickens the circulation through the muscles,

supplying food and carrying away waste, and hinders the deposition of fat in the muscle.

8. The healthy person is quite sure to have a good appetite. Overeating is a common mistake which causes more pain and suffering than is generally supposed. The appetite for alcohol in many cases becomes a mania, leading to the use of alcohol in poisonous quantities.

ARITHMETIC.

1. What is the Speer method in number?
2. Add 662347
257938
689477
893298
478469
328947
890589
445828
768894
325587
894503
431164
405006
601115
999999

8. A real estate agent wishes to divide three pieces of land 825, 625 and 950 feet wide into town lots of equal width. What is the largest possible width for each lot?
4. Into a vessel containing pure vinegar there was poured 12½ gallons of water, which was 16⅔ per cent. of the mixture. What was the quantity of pure vinegar?
5. A man travels until his watch is 1 hour, 5 minutes, 16 seconds slow. Has he traveled east or west and through how many degrees?
6. The municipal rates being reduced from 19⅜ mills to 17⅞ mills on the dollar, my taxes are lowered by $4.05. For how much am I assessed?
7. Algebra.—A house and garden cost $850. Five times the price of the house was equal to twelve times the price of the garden. Find the price of each.

1. "The fundamental thing is to induce judgments of relative magnitude. The presentation regards the fact that it is the relation of things that makes them what they are. The solution of problems is merely the perception of relations."

2. 9,068,561.

3. G. C. D. of 325,625,900, or 25 feet.

4. If 12½ is ⅛, the whole mixture is 12½×6, or 75. 75 gal.—12½ gal=62½ gal. pure vinegar.

5. He has traveled east. To find how far, multiply difference in time by 15, getting 16° 19′.

6. The rate of reduction is 1⅛ mills. $4.05÷.0015 gives $2700. his assessment.

7. x+y=850. 5x=12y. Hence x=$600, cost of house; y=$250, cost of garden.

LITERATURE.

1. Who is your favorite essayist? Why?
2. Main facts in his life?
3. His place in literature?
4. Which do you prefer: Poetry or prose? Why?
5. What oration do you like best? Why?
6. Tell the main argument in this oration.
7. Name the kinds of persons who appear in some one play of Shakespeare's.
8. Comment on one of Bryant's poems.
9. Discuss some idea that you have found in the work of Holmes.
10. Write a paper of not less than 150 words on "A Pleasant Surprise."

As in preceding examinations these questions are so arranged as to give the applicant an opportunity to express personal views and preferences, and hence demand no answers.

READING.

(Based on the general field of reading.)

1. Will the pupil who understands the thought of the passage be sure to read it correctly?
2. What is emphasis, and what its use?
3. What is the educational value of reading as compared with other branches?
4. What is the difference between accent and emphasis?
5 and 6. Ask five questions best adapted to bring out the meaning of the following:

"Who steals my purse steals trash; 'tis something, nothing;
'Twas mine, 'tis his, and has been slave to thousands.
But he that filches from me my good name,
Robs me of that which not enriches him and makes me poor indeed.

7. What general preparation does the teacher of reading need?

(Based on the general field of reading.)

1. He may not be able to control his vocal organs or may fail in some point of form, but the understanding of the thought is the first *essential* toward correct reading. (Pp. 225–226.)

2. Emphasis "includes any manner of making a thought prominent." (P. 139.) Its use is to make clear to the mind of the listener the relative importance of the ideas expressed.

3. Since reading serves as a means of approach to other subjects and is thus fundamental in importance, it may be thought of as taking precedence.

4. If "accent" is used in its most common sense it refers to the extra stress laid upon one of the syllables of a word, thus making the symbol intelligible, while emphasis as defined above refers to relative stress placed upon the thoughts expressed.

5. and 6. (1.) What two ideas are contrasted?
(2.) In what point are they contrasted?
(3.) In what sense is it true that "who steals my purse, steals trash?"
(4.) Explain: "Has been slave to thousands."
(5.) Explain the meaning of the last line.

7. (a) A wide and thorough acquaintance with the field of literature in general, and (b) "the power of adequate vocal expression."

(Based on "How to Teach Reading.")

1. Give the "time" in which each principal part of the following should be read:

"Then whirling up his broad-sword
With both hands to the height,
He rushed against Horatius
And smote him with his might.
With shield and blade Horatius
Right deftly turned the blow;
The blow, though turned, yet came too nigh,
It missed his helm, but gashed his thigh;
The Tuscans raised a joyful cry
To see the red blood flow."

2. What is the appropriate "pitch" for soliloquy? Why?
3. What "pitch" is appropriate to climax?
4. What is *strength* in literature?
5. What relation does a knowledge of psychology bear to the successful teaching of reading?
6. What effect will the habit of careless and incorrect

reading have upon the general scholarship of the pupil? Specify.

7. Read the following to the Superintendent:

"Farewell, a long farewell to all my greatness,
This is the state of man! to-day he puts forth
The tender leaves of hope; to-morrow blossoms,
And bears his blushing honors thick upon him;
The third day comes a frost—a killing frost
And—when he thinks, good easy man, full surely
His greatness is a ripening—nips his root,
And then he falls, as I do."

(Based on "How to Teach Reading.")

1. Lines 1 to 4, fast and strong; lines 5 and 6, fast; lines 7 to 10, slower on account of change in feeling due to wounding of Horatio. (See P. 281.)

2. As a rule, low. "The absence of desire to reach others removes the tension, and in consequence the pitch is low." (See P. 49.)

3. High.

4. "Strength" in literature generally refers to the possession of some great insight into life, or the power to move the feelings profoundly, or to some excellence of art in the mere manner of expression. The strongest literature of the world is great in all these particulars.

5. The aim of reading is communication. A knowledge of the processes by which the mind reveals and assimilates meaning will form the basis of the teacher's work.

6. Bad effect. Suppose a pupil is working on a problem in interest. Everything depends upon a clear understanding of the conditions of the problem. This understanding comes through reading it.

HISTORY.

1. To what monarch did Columbus first apply for aid in his voyage of discovery?
Why did he apply there rather than to other countries?
2. What controlling motives influenced the respective nations that engaged in the settlement of North America?
3. Describe briefly the Patroon System in New York.
4. What were the territorial limits of the United States as established by the treaty of 1783?
5. With what important enterprise or invention was each of the following named persons especially connected:
Robert Fulton.
De Witt Clinton.
Samuel F. B. Morse.
Cyrus McCormick.
Elias Howe.
Cyrus W. Field.
6. What was the effect in the Northern States of the passage of the Kansas-Nebraska Bill?
7. What disputes led to the impeachment of President Johnson?

1. To John the II. of Portugal. Portugal was then the center of nautical enterprise, and after Columbus had been rebuffed as a visionary by the senate of Genoa he wandered to Portugal. While there he married the daughter of one of King John's famous navigators.

2. First, there was the desire for gold and the hope of finding it in large quantities; next was the desire to extend commerce; finally, the general wish to found colonies and extend possessions.

3. The patroons, or Dutch proprietors, were absolute rulers of the little colonies they established. A patroon agreed to transport fifty settlers to his grant of land, provide each settler with a stocked farm, and employ a schoolmaster and a preacher. It was a kind of moderate feudal tenure.

4. The northern boundary was about the same as it is now. The western boundary was the Mississippi, the southern boundary was the 31st parallel from the Mississippi to the Apalachicola and thence to the Atlantic along the present northern boundary of Florida.

5. Fulton invented the steamboat, Clinton fathered the Erie canal, Morse invented the telegraph, McCormick the harvester, Howe the sewing machine, Field laid the first Atlantic cable.

6. It aroused a spirit of bitter hostility.

7. It grew out of the quarrel between the president and congress over reconstruction. The "Tenure of Office Act" was passed, the president disregarded it, and was impeached.

GRAMMAR.

"The hills are dearest which our childish feet
Have climbed the earliest, and the streams most sweet
Are ever those at which our young lips drank,
Stoop'd to their waters o'er the grassy bank."

1. (a) Name the principle clauses in the above.
(b) Name the subordinate clauses.
2. Underscore with one line the subjects and with two lines the predicates of each clause, both principal and subordinate.
3. (a) Select the connectives and classify them.
(b) State what the following phrases modify: (a) "at which"; (b) "o'er the grassy bank."
4. State what each of the following modifies: (a) "which" (line 1); (b) "most sweet;" (c) "ever;" (d) "stoop'd."
5. Classify the following verbs as transitive or intransitive and give the tense of each: (a) "are" (line 1); (b) "have climbed;" (c) "drank."
6. Give the syntax (case and reason) of (a) "feet;" (b) "stream;" (c) "those."
7. Select an adjective in (a) the positive degree; (b) one in the superlative degree; (c) select an adverb in the superlative degree.
8. Give your opinion of the main objects to be kept in view, and the method and means to be used in teaching the English language in the Grammar grades.
9. Which is the most profitable from a disciplinary point of view in the study of language, the acquisition of principles, rules, definitions, parsing, and analyzing, or practical composition work? Explain fully.
10. Write not less than fifteen lines on one of the following subjects, giving the closest attention both to the thought and the mechanical features of your composition.
(a) Should newspapers be used in school work?
(b) How a school house should be furnished.
(c) Some possibilities of the twentieth century.

1 and 2. Principal clauses: "*The hills* are DEAREST," "*the streams most sweet* are ever THOSE."

Subordinate clauses: "WHICH *our childish feet* HAVE CLIMBED THE EARLIEST." "AT WHICH *our young lips, stoop'd to their waters o'er the grassy bank*, DRANK."

3. (a) The word, "which," in the first line and

in the third is a relative pronoun, subordinate connective. The word, "and," is a coordinate conjunction. (b) "at which," modifies the word, "drank;" "O'er the grassy bank," modifies the word, "stoop'd."

4. (a) "have climbed;" (b) "streams;" (c) "are;" (d) "lips."

5. (a) Not a property of pure verb, present tense; (b) transitive, present perfect; (c) intransitive, past.

6. (a) Nominative case, principal part of subject of clause; (b) nominative case, principal part of the subject of the clause; (c) nominative case, predicate of the clause.

7. (a) "young;" (b) "most sweet;" (c) "earliest."

8. Two ends should be kept in view: (1) To give the pupil skill and power in the use of the sentence as an instrument in expressing his thought. This purpose is most prominent in the grades below the seventh but the teacher must never lose sight of it while the child is under her instruction. (2) To lead the child to master the rules and principles according to which sentences are constructed. This phase of the subject would be mastered largely in the seventh and eighth grades.

8. There is no better mental discipline afforded in the study of any subject than is given in technical grammar, if it be taught inductively, the pupil being led to think out all the principles and definitions from sentences studied by him.

SCIENCE OF EDUCATION.

1. What argument is used by the author of *Organic Education* to show that children can comprehend the subjects of sociology, art and ethics?
2. How are these subjects to be presented to the children from the first grade up?
3. Is it true that the child's first desire for an expressive interpretation of the facts of life is satisfied with animal stories and myths? If this is the case, can you offer any explanation of the fact?
4. Instead of the formal use of a reading book, some schools seek to give the child a knowledge of the best literary products of the race by the study in each grade of such literature as he can fairly comprehend. Express your opinion of this practice, giving reasons.
5. Is it possible in your opinion, to lead children into an appreciation of the true relation of the individual to society? How can the schools do this, if at all?
6. Characterize the education of the Christian countries of the world from the beginning of the Christian era to the Reformation.
(Note to Superintendent.—This question should be graded on the basis of two-fifths of the examination.)
7. What led to the neglect of physical education during the early Christian centuries?
8. In the fourth century A. D., Basil the Great said: "The habit of reading bad actions leads to doing bad acts." Express your opinion of this doctrine, giving reasons.
9. Suppose the Bible were studied in the public schools as other literature is studied, what arguments could be adduced in support of the practice? What objections, if any, could be reasonably made?

1. "That the child can grasp any subject whatever if only it be unfolded to him in logical order in response to the demands of his own interest."

2. These subjects must be so presented that there will be slow and steady growth in them. The children are to live them from the first grade up.

3. It is undoubtedly true. The story is the best form because it aids the child's thought-connection. Animal stories are probably acceptable because they are stories of life and of life in close touch with the life of the child. The myth is a suitable embodiment of the truth at this fanciful age.

4. It is the proper course to pursue because the child is entitled to the best literature and the culture-epoch idea in its best sense may be so carried out.

5. It is possible. By making the school the other institutions in miniature; by having the child live every day the principles underlying the institutions; by having the people learn that they are the school.

6. It was for the church; to foster the dogmas and doctrines of the church; it was monastic.

7. The exaltation of the spiritual to the utter neglect and disregard for the physical; a mistaken idea of the relation of body and soul.

8. The doctrine is correct. Literary creations lived in through the imagination are just as real stimuli to action as the presence of sensuous things.

9. The bible represents the great universal truth in life, and there is no reason in the world why it should not be studied in the public schools.

GEOGRAPHY.

1. What part of the Atlantic coast of America is due west of Spain?
2. State approximately the latitude of Indianapolis.
3. How do you account for the mildness of the climate on the west coast of Norway?
4. What is drift? Where found?
5. Name eight colonial possessions of Great Britain.
6. (a) Distinguish between anthracite and bituminous coal.
(b) Name four counties in Indiana which produce coal.
7. What are the zones of light? How are they bounded?
8. State fully why Michigan produces so much fruit.
9. Why is the range of temperature from winter to summer so small on the Pacific coast?
10. What New England state has no coast line?
11. Of what materials is a volcanic mountain composed?

1. The coast of the North Atlantic States.

2. Forty degrees north latitude.

3. By the strong and constant southwest winds and the large volume of warm water brought by the Gulf Stream.

4. Glacial drift is the sediment deposited from a glacier or ice sheet. It is found in most high mountain regions. It also covers northeastern North America as far south as the Ohio and

Missouri rivers, and northern Europe to about the 52d parallel.

5. Canada, Australia, New Zealand, India, Jamaica, Guiana, Cape Colony, Ceylon.

6. (*a*) Anthracite coal is hard, heavy and lustrous, and contains from 85 to 98 per cent. of carbon. Bituminous coal is soft, light and dull, and contains from 40 to 70 per cent. of carbon.

(*b*) All the counties from Warren southward to Perry and Posey produce coal.

7. The zones of light are bounded by the tropics and polar circles. Every point in the zone between the tropics receives the vertical rays of the sun on two days in the year. Every point within the polar circles receives the tangent rays of the sun on two days in the year. The zones between the tropics and polar circles receive intermediate amounts of light.

8. The presence of the Great Lakes gives Michigan favorable conditions for fruit raising. The water is warmer than the land in winter and cooler in summer. It warms more slowly in spring and cools more slowly in the autumn. Hence it tends to prevent extremes and rapid changes of temperature.

9. The Pacific coast is exposed to the winds from the ocean and protected by mountains from winds from the land.

10. Vermont.

11. Of lava or melted rock in various forms; as, sand, or "ash," pumice scoriæ, and lava streams and sheets.

SPRING, THE SWEET SPRING.

Spring, the sweet spring, is the year's pleasant king;
Then blooms each thing, then maids dance in a ring,
Cold doth not sting, the pretty birds do sing,
Cuckoo, jug-jug, pu-we, to-witta-woo!

The palm and may make country houses gay,
Lambs frisk and play, the shepherds pipe all day,
And we hear aye birds tune this merry lay,
Cuckoo, jug-jug, pu-we, to-witta-woo!

The fields breathe sweet, the daises kiss our feet,
Young lovers meet, old wives a sunning sit,
In every street these tunes our ears do greet,
Cuckoo, jug-jug, pu-we, to-witta-woo!
Spring! the sweet spring!

—*Thomas Nash.*

EDUCATIONAL LITERARY AND GENERAL ITEMS.

Professor Horace A. Hoffman, dean of Indiana university, has returned to his post after a period spent in advanced work at Harvard.

Professor E. B. Bryan, who is on a year's leave of absence doing advanced work at Clark university, will return to Indiana university at the opening of the fall term.

The new catalogue from Vincennes university shows that institution to be in a flourishing condition. President Yoder and his associates are doing conscientious and efficient work.

Professor C. H. Kellogg, for the past three years superintendent at Boswell, Indiana, is obliged by ill health to give up teaching for the present and goes to Arkansas early in May.

Kirkwood observatory will be erected on the Indiana university campus this summer. A twelve-inch glass has been ordered from Brashear. The observatory will be one of the best equipped in the West.

With its latest catalogue Purdue university is sending out a handsomely printed pamphlet of selected views. These attractive pictures would seem sufficient to enlist a real interest on the part of students about to select a technical school.

The Northern Indiana normal school at Valparaiso is unique among its class. President H. B. Brown and his associates have made it a great success. Whether you think of attending a summer normal or not his announcement on our advertising pages will be found of interest.

Charles Montaville Flowers, the impersonator, under the auspices of the Ashland (Ky.) high school, gave *The Little Minister* April 2 to a large and appreciative audience. The proceeds of the entertainment are to be used to purchase silver ware, etc., to be used at the annual school banquets.

The citizens of Ashland (Ky.) showed their appreciation of the public schools by the manner in which they came out to view the work on the annual reception days, April 20 and 21. This is always a great time in the Ashland schools, and no pains are spared to make it a great success.

The Penmen's Publishing Co. of Emporia, Kansas, have put out a large page prospectus to illustrate their system of teaching penmanship. After sixteen pages of descriptive matter there are twenty-eight pages of exercises, principles and copies. The plan is one that appeals to

speed and legibility as the most desirable qualities.

The many friends of Superintendent W. A. Millis will be pleased to know of his call to Crawfordsville, Ind., as the successor to Superintendent Kenaston. This looks like a very substantial promotion, for which Professor Millis's faithful and efficient work at Attica and other places have well qualified him. He accepts the call.

Professor William Lowe Bryan, of Indiana university, has been given leave of absence for a year beginning August 1st, and he will spend the time in Europe. He will have charge of his regular work in the summer school, which begins June 20. The authorities at Indiana university are expecting a large attendance during this session.

The friends and patrons of the La Porte (Ind.) schools are highly pleased with a display of drawing, molding, painting, cutting, etc., done by the pupils of all grades in that city. Superintendent Jno. A. Wood has so directed the work as to correlate it closely with the textbook work of the schools and at the same time develop manual and artistic skill.

The Indiana state oratorical contest held at Richmond April 13 resulted in a victory for Walter Eggemeyer, a member of the class of 1901 in the Richmond high school. His oration on *Charles Sumner* is described as a glowing tribute to that statesman, delivered in an earnest and eloquent manner. Indianapolis was given second place, and Portland third place.

In connection with the Chicago institute to be opened early in July there is to be published a monthly periodical called *The Chicago Institute Course of Study*. Designed primarily to assist the teachers of that school it will surely be of large interest to teachers generally who wish to keep informed upon the regular work of this training school. The price is to be $2.00 per year.

The New Albany Ledger announces the reelection of Wm. H. Hershman as superintendent of the city schools after a service of several years. Mr. Hershman is credited with bringing the schools up to a high standard of efficiency. They graduate a class of thirty-nine this year. Professor Hershman himself writes that he and his teachers resumed work with new inspiration after the Evansville association. "Our teach- always feel rejuvenated by such meetings."

The May issue of the *Delineator* has quite a collegiate flavor. Three stories in the one number are localized at Smith college. Every girl with college ambitions will find these clever sketches interesting, particularly that of the student who "cut her French exam." The point of the story is perfectly concealed until the last sentences. Under "College News," the same magazine tells of all the quaint and pretty customs that now cluster around commencement at the leading colleges for women.

That another Pan-American congress is to be held similar to the one held in Washington a few years ago is an indication of continued or increasing friendliness among the various American nations. In addition to the commercial questions which are likely to form the basis of most of the discussions, it is hoped that an effort will be made to establish some kind of a tribunal for arbitration among as many republics as may agree to ratify such a proposal. The coming congress will be held in the city of Mexico.

The friends of Dr. B. W. Evermann in Indiana, formerly head of the department of biology in the Indiana state normal school will be pleased to know that he has recently been invited to deliver a course of lectures before the students of Cornell university, on fish culture and fish protection. This is a great honor to Professor Evermann as some of the leading men in the country are invited to lecture in this course. THE INLAND EDUCATOR in behalf of his friends in Indiana extend congratulations to Professor Evermann.

Harvard university has agreed to give instruction during the summer of this year to a considerable number of teachers in the schools of Cuba. Although this instruction is to be given in Cambridge during the session of the summer school, the work is not to be done in that school, but under separate direction and by instructors especially chosen for that task. A few of these Cuban teachers, who have a sufficient knowledge of English, may be entered in the regular summer classes; but the number thus qualified is likely to be very small.

THE EDUCATOR has been favored with numerous invitations to graduating exercises. They are all redolent of happy faces, music, flowers, and resolutions to follow the highest ideals. Superintendent Geo. B. Asbury of Flora has a class of fifteen graduates; Roann graduates four, Wm. Eisenman superintendent; Knox graduates three, Walter Dunn superintendent. The exercises at Lebanon were held April 27, James R. Hart superintendent. Upon an interesting program the following subjects appear: "Woman as Author," "Woman as Poet," "Woman as Heroine," "The Man With an Idea,"

"The Man With a Pen," "The Man With a Hoe," "The Man With a Purse."

The Charleston meeting of the N. E. A., July 7–13, is commencing to offer many inducements to teachers who may find it possible to attend. The weather bureau shows that a delightful temperature may fairly be expected. The record of the past shows that the hottest time ever experienced during a session of the N. E. A. was at Milwaukee. The railroads offer the usual rates of one fare plus two dollars, with a wide diversity of routes going or coming, and a late limit. There are many local attractions in Charleston, and the South is likely to vie with Los Angeles in its proverbial hospitality. The program is not yet complete, but promises to be fully up to the standard of excellence.

During the past month three new educational publications have reached our exchange table—a kind of early spring crop as it were. *Teachers College Record* comes from New York city, and is to be supported by Teachers college of Columbia university. "The purpose of the series is to give the faculty and students of the college a comprehensive view of the actual workings of the schools of observation and practice, to provide graduates of the college with a means of prolonging their professional studies, and to acquaint the public generally with the theory and practice of teaching adopted in Teachers college. To the extent that Teachers college is a typical professional school, this journal will be devoted to the practical problems involved in the professional training of teachers."

From Quincy, Ills., comes *School Music Monthly*, edited by P. C. Hayden, supervisor of music in the Quincy schools. This paper aims to do three things: print fresh and appropriate music for special occasions, discuss advanced musical theories, give the musical news.

Twentieth Century Educator comes out in an attractive dark drab cover and announces a strong list of contributors for the coming year. It takes a hopeful view of education for the new century and declares its sympathy with the progressive teacher.

Those desiring to make the best use of this summer, and to prepare for larger incomes, should observe the great inducements offered by the several summer schools of the Indianapolis Business university. We can cordially recommend such studies and such special opportunities as are offered for this summer by this reliable and progressive institution. This enterprising movement shows that the university understands the needs of the times. The great revival in all lines of business is calling for many educated office assistants. A half century of successful work and the commendations of more than 25,000 students whom it has trained give the university the highest standing and enables the management to assist the students in securing the best positions. It is a fact that time and money spent in getting an education in this long established institution is simply an investment.

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We notice quite a number of names of leading Indiana people in the lists of tourists visiting Europe this season with the "Wards Tours" personally conducted parties under the management of V. C. Ward, Columbus, O. He will conduct a party through Palestine this Fall, starting August 20th.

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JUNE, 1900.

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VOL. X. JUNE, 1900. No. 5.

The School and the School Board. When Superintendent Jordan of Minneapolis declared before the body of superintendents assembled at their department meeting that there were more good boards than poor ones, and that for the most part they were composed of conscientious, capable men, he was greeted with spontaneous and hearty applause. This was both gratifying and proper; for there is little doubt that the average school board or the average trustee desires nothing less than the good of the schools. The community generally recognizes the value of business experience in the administration of a school and therefore chooses business men for such positions. The instances where these men take on such self-importance as to think they are called to direct even the professional work are really rare in comparison. They come more and more to recognize the value of men and women who know their business as teachers and to entrust to them both power and responsibility. Moreover, the work of the school board is often a thankless task. It seems well to remember, and even to say sometimes, that the schools owe much to their faithfulness.

* * *

Teachers' Positions. *In the School Bulletin* for May the editor, Mr. C. W. Bardeen, has something to say about civil service for teachers, that has a different ring from the usual discussions of that subject. The cry has long been for a safer tenure of office; uncertainty is a perennial bogy; we are accustomed to throw up our hats at every report of an election for more than the conventional one year. Mr. Bardeen favors, of course, the continuous service of efficient teachers, on the theory that one who does good work this year is usually apt to do better work next year if she can do it in the same place. "Frequent changes are incompatible with satisfactory progress. At the same time he finds a serious menace to the good of the schools in a degree of security that makes it difficult or impossible to replace a poor teacher with a better one. Without advocating change at all except in the interests of better service, he holds that freedom on the part of the authorities to make needed changes is a continuous incentive to growth on the part of the teacher, a first essential to life in the school. We think he is right.

* * *

"School Reform." Under this title Professor Hugo Münsterberg contributes an interesting and vigorous article to the May *Atlantic Monthly*. The fact that the paper is based upon the writer's own experience as a school boy in Germany, and that Dr. Münsterberg is not only a close observer but a clear thinker would seem to recommend the article to teachers as well worth reading. He takes the position that the tendency to offer elective privileges to young and unformed minds is a great mistake. His personal experience in finding his own life work finely illustrates his contention. We should remember, however, that the German idea of discipline, both mental and physical, is much more rigid than ours here in America. We might easily suppose that a well-educated German would see great dangers in the freedom of our elective systems. More surprising, however, is Dr. Münsterberg's belief that the tendency to improve the schools by a pedagogical psychological preparation of the teachers is as much of a mistake as election. "Psychology is a wonderful science, and pedagogy, as soon as we shall have it, may be a wonderful science, too, and very important for the school organizer, for the superintendents and city officials, but the individual teacher has no practical use for it. I have tried to show how the conscious occupation with the pedagogical rules interferes with the instinctive views of the right pedagogical means, and above all how the analytic tendency of the psychological and pedagogical attitude is diametrically opposite to that

practical attitude, full of tact and sympathy, which we must demand of the real teacher, and that the training in the one attitude inhibits the freedom in the other." The great need which the paper emphasizes is the need of the right kind of teachers. The schools need "teachers whose interest in the subject would banish all drudgery, and they have teachers whose pitiable unpreparedness makes the class work either so superficial that the pupils do not learn anything, or, if it is taken seriously, so dry and empty that it is a vexation for children and teachers alike. To produce anything equivalent to the teaching staff from whose guidance I benefited in my boyhood, no one ought to be allowed to teach in a grammar school who has not passed through a college or a good normal school; no one ought to teach in a high school who has not worked, after his college course, at least two years in the graduate school of a good university; no one ought to teach in a college who has not taken his doctor's degree in one of the best universities; and no one ought to teach in a graduate school who has not shown his mastery of method by powerful scientific publications." This sets a high standard, and, remembering that only two per cent. of the school teachers have a college degree, it leaves us a long way to go. Perhaps Dr. Münsterberg has not sufficiently recognized in this article the personal element in the teacher—native teaching ability but he is not far astray in recommending the teacher 'who has the inspiring enthusiasm for his science which springs from a profound scholarly knowledge."

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Brief Items of Current News. The annual meeting of the National Kindergarten Union held in Brooklyn the latter part of April was regarded as the most encouraging one in the series of which this is the seventh. There was no evidence of declining interest in the movement, but rather every indication that the kindergarten is thoroughly established as an important feature of our school system. The deep interest has caused some differences as to best methods, but none as to the educative value of Froebelian principles.

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The famine in India is found to be of greater extent and severity than that which devastated the country three years ago. The chief cause of the great scarcity of food is the failure of the southwest monsoons which usually blow in June, laden with moisture from the Indian ocean. Sometimes when this fails the northwest monsoon in November brings enough rain to make possible at least part of a crop. Last year both of these failed. Much aid has been sent from all parts of the world but the suffering is intense.

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The Boers appear to be losing ground steadily in their war with great Britain. General Roberts is well on his way from Bloemfontein to Pretoria. He has a force large enough to protect his base of supplies, while the Boer army is unable to do much more than harass the British advance. It has been hoped that a way would be found to end the war by offering the Boers such terms as a liberty-loving people could accept. With the situation as it is to-day Great Britain could afford to be magnanimous; but it is not likely that terms of peace will be discussed until General Roberts reaches the Boer capital.

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Teachers and students who care for birds, as most of them do, will be interested to know that a law has been passed in the state of New York placing a heavy fine upon the use of certain wild birds as millinery ornaments. Of such birds the law says that they "may not be killed or caught at any time, or possessed, living or dead, nor shall the plumage or skins or any part of such birds be so possessed." While this is only a state law it shows what may be done in other states when popular sentiment is strong enough.

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In Our Dependencies. The Puerto Rican bill under which the government of the island is organized defines the status of the people as citizens of Puerto Rico, and, as such, entitled to the protection of the United States. The more important features of the bill are here briefly enumerated. Existing laws are continued in force except such as conflict with the statutes of the United States. Puerto Rican coins are replaced by those of the United States. Titles to public improvements such as bridges, highways, harbors, water powers, acquired by the United States from Spain are transferred to the Puerto Rican government for the benefit of its people. The government is vested in a governor, an executive council, and a house of delegates. The first and second are appointed by the president of the United States, and the third is to be elected by the people of the island. The executive council consists of a secretary, attorney-general, treasurer, auditor, commissioner of the interior, commissioner of education, and five other members. This makes a council of eleven, at least five of whom must be Puerto Ricans. Members of the house of delegates must be able to write and

must own taxable property in Puerto Rico. The people of the island elect one of their citizens as resident commissioner at Washington, to represent their government at the United States capital. A tariff, equal to fifteen per cent. of the Dingley tariff is imposed on imports and exports between the United States and Puerto Rico. According to the advocates of this measure these duties are levied entirely for the benefit of the island, to create a fund for running the government. The tariff is to become inoperative in two years, or sooner if provision is made to meet public needs. It will be noticed that the Puerto Ricans are thus given a share in the government though not a controlling share. It is the evident purpose of the United States to aid the people of the Island, gradually and safely to become self-governing.

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The new era in Puerto Rico has an auspicious opening in the appointment of Charless H. Allen as the first governor. He is said to be eminently fitted for the responsible position, and to have accepted it only at the earnest solicitation of President McKinley. Governor Allen's inaugural address was received with courteous attention, though with only moderate enthusiasm by the natives, whom he addressed as "Fellow-citizens of Puerto Rico." The attitude seems to show that the people will become willing citizens when the United States proves her good faith, not before. In closing, Mr. Allen said: "Henceforth we are under one flag. We are under the same institutions of freedom, equality and education. Together we move on in the great American current of advancing civilization. Loving our country, animated by a high sense of honor, devoted to a common humanity, we take our place before the world, and invoke on our progress the blessing of Almighty God."

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With such a competent man as General Wood at the head of affairs in Cuba, and with Dr. A. E. Frye to look after the educational interests the development of that island should go forward at a good rate. It must not be expected, however, that the people can be lifted out of illiteracy in a day. Ignorance is the great curse that Cuba has to overcome, and ignorance is not compatible with republican government. The United States recognizes the size of the task it has undertaken in attempting to plant a system of free schools in Cuba, but it recognizes also the need, and has begun in earnest. Professor Frye in speaking of his work says: "March 1st we had 3,099 schools in operation, with 130,000 children enrolled. I appointed Cuban teachers, because it was necessary to teach in Spanish, and because they helped to support many needy families. We hope to add English to our course of study, and night schools for adults have already been started."

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Hawaii has become a full fledged territory with such modifications as its peculiar conditions demanded. It has a representative in Congress who may debate, but not vote. This delegate is chosen by the people of the islands. Sanford B. Dole who has for years ruled the islands with great skill and judgment has been appointed the first governor of the territory. The tariff laws of the United States are made to extend to the islands.

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Better County Institutes?

That the system of local institutes now so general throughout the states of the union is a great feature in American education, goes without saying. That there is large room for improvement, and that a vast amount of energy is wasted may be just as readily accepted as true. Perhaps, too, most teachers will agree that the ideal system has not yet been found, but that some plans are much better than others. Superintendents both state and county, are alive to the defects, and are earnestly seeking the remedies. They realize that the instructor who attempts to teach the heterogeneous group of teachers representing all grades and all kinds of school work, and to inspire them to better things has an enormous task on hand. Thoughtful teachers realize this, too, and they realize that many an earnest effort to achieve these two ends falls far short. It is not difficult, for one who has the capacity, to amuse an audience of teachers, to skim along over the announced topic and freely intersperse the ramble with anecdotes and stories more or less improbable. That is easy enough for one who knows how; and we all enjoy it, for the time. Who doesn't like to be amused? We all love the humorist, and he has his blessed place in the economy of life, but let us hope that soon, the institute jokes and anecdotes and funny stories, excepting just enough for spice, may be gathered out from the regular serious work, and saved for the 'evening lecture.'

But the temptation to entertain is not all. A great deal of serious work is done which the average teacher fails to appropriate because he can not or at least does not relate

it to his work. To put it another way, there is neither unity nor continuity. If the work of the various instructors at a given institute is at all related, the one to the other, it is the result of a happy chance rather than of purpose. The same thing may be said of the instruction in successive seasons. It can not be otherwise without a unified plan. Each instructor works in the dark, and the total result is likely to be scrappy. At the best, the teachers go home with new impulses and aspirations that may or may not last until the schools open in the fall. Nevertheless, there is good in simply coming in touch with scholarly minds, and it is worth while that teachers meet thus with each other. What THE EDUCATOR advocates is all this and something more.

A few months ago *The Western Teacher* expressed the belief that "to avoid profitless repetition and to articulate the work of the different instructors into a unity, so that in a series of years there shall be presented a body of knowledge systematically correlated is not so difficult as it might at first seem to be." The following plan, adopted by Superintendent L. D. Harvey of Wisconsin is commended: "To each instructor is sent a blank book of convenient form for mailing and filing, with direction to report in detail what was done in each class the instructor taught during the institute season. It is recommended that they make notes each day of what was done in each branch. These reports are sent to the state superintendent at the close of the institute and will be filed there until next season, when they will be distributed to the instructors who shall then be assigned to the same counties. How valuable a guide this will be after a year or two all experienced conductors will readily appreciate. It will tend to impress on institute instructors the fact that there was a heretofore and there will be a hereafter."

Superintendent Louis H. Hamilton of the Jasper county (Ind.) schools would offer the following:

"I believe that our institute instructors should be appointed and work under the direction of the state board of education. That they should be paid a salary and expenses out of the state treasury. That they should visit the district, town, city and higher institutions of learning in the state. They should be the best educators of our country and should be paid a salary which would secure such talent. Through the state board they should make recommendations to our legislature. These instructors should issue directions to county and city superintendents as well as to teachers, and working through the state superintendent and state board they could do much for the educational interests of our state." Plans similar to these, in use in other states place them beyond the experimental stage, and render them worthy of study by all who wish to make the county institute of the greatest possible value to the schools.

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The Teacher's Part in the Institute.

Among the doctrines that we hear much preached to-day there is that of participation. As teachers we agree pretty well that the recitation belongs mostly to the pupil, and that the common practice of reciting for the class is not commendable. There are, of course, arguments in favor of the lecture plan for mature students, but the impression is quite common that the interest in the institute could be much increased if the teachers could share in active participation with the instructor. It would doubtless turn out that an attempt to turn the teachers into pupils might almost justify hysterics in some cases, so fearful are we of making mistakes in public. The *Colorado School Journal* well points out that "What we attend institutes for, is not to find out what good teachers we are, but to find out what poor teachers we are. There is one thing worse than not knowing something we ought to know, and that is never finding out that we don't know it, and so never realizing the necessity for informing ourselves." Perhaps the most profitable order will be an alternation of lecture with recitation. By request, Dr. D. W. Dennis has expressed his views, based upon large experience as an institute instructor.

"The good of the teachers' institute as it is now conducted lies in the inspiration which it gives to the teacher; it presents duty in diviner forms; learning with new charms; ideals to which the teacher has hitherto been a stranger; provincialism renders the institute's entire virtues in one word: '*rousement.*' The best thing the institute ever can do is to give this higher incentive, and it is doing this best thing well.

It could however I think do more; it could accomplish all it now does better, perhaps in half the time. At Evansville last year we had half day sessions, and I have never known the main purpose to be reached better than it was there. I would accordingly try the experiment of conducting the morning session as it is now conducted; in the afternoon I would have classes organized and have the instructors conduct them as they would in their home schools—classes in higher branches of instruction, I mean, not in the common branches. The teachers in classes of not over forty could organize beforehand and ask for work in algebra, literature, biography, travel, art (in view of the modern purchase of pictures I should think painting or sculpture could be pursued with the greatest profit), nature study, etc. In three of the four institutes I have helped conduct, I offered such instruction outside of institute hours. The work was entirely voluntary. It was on forest trees; the results were, a class of forty or more at each place; forty-nine text-books were bought in the three institutes, in one a club was formed for an all-the-year course in the study of trees, with a weekly outing during good weather. 'Not much can be done?' Of course not but the little will often be a beginning that could not otherwise be made at all; when I first spoke of the matter there was no response; it was Wednesday before we were at work; after three recitations a Thursday P. M. outing was had and fifteen trees were identified without a single mistake being made by all the class. An unusual interest has been awakened in child study, architecture, Kablu, or birds; clinch it by action and a text-book; give a *start* in work as well as an *interest* in it."

These seem like wholesome suggestions. They are offered merely as such, and with a hope that both teachers and instructors will think of the institutes about to be held as an increasing source of good to the schools.

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Vacation Problems.

The variety of ways in which teachers are accustomed to pass the summer months, the variety of needs that depend largely upon the use of these months, and the variety of inducements to this, that, or the other, give rise to certain vacation problems not always of easy solution.

If it is true that a teacher's power and usefulness depend primarily upon good health, then the problem of how to keep well and strong is of the first importance. Under ideal conditions—when they come—teaching will make no larger draughts upon the vitality of the teacher than does any other earnest work. So long as teachers find their vitality steadily declining toward the close of the year something is going wrong. If loss of energy is due to weather let the work schedule be so modified as to fit the changing conditions. A slight readjustment often accomplishes a great deal. If children grow listless and restless, as they do, and the schedule is ironclad, the teacher sees no alternative from subjecting herself to a higher tension, keeping the interest of the school up to a certain pitch, and depending upon the summer to recover her lost strength. Rather let the tired feeling be accepted as a warning that it is time for a slight change in program. It is poor economy to expend so much energy in one day that efficiency will be impaired for the coming days. Just so the work of the spring term should not be so exhausting as to preclude the enjoyment and improvement of the vacation time. The belief is growing that a three or four months' rest for teachers is not essential. But such a belief can be well founded only so long as the teacher uses each day's strength for that day's duty. The problem of summer rest, then, ought to be largely solved during the spring days by a wise economy of strength. This appears to be good theory. If it has worked out differently in practice, the first duty of all is recreation and rest.

Suppose, however, that the work of the year has been so happily adjusted that a good sleep or two finds the teacher prepared for new duties as the vacation begins. What shall be done with it? A few years ago the average teacher went back to the farm and grew strong physically under the vigorous stimulus of farm life. Those were the days when the ability to "keep school" constituted the teacher's qualification. Mental growth mattered little. Now, all that has changed. The teacher who does not grow may as well resign unless he can secure a temporary respite by virtue of a pull. To help solve this problem of growth the summer schools have grown up everywhere. They invite students of all classes, all ranks, all degrees, from the high school graduate to the Ph. D. Expenses are low, facilities

large, and the schools so numerous that the teacher-student may almost consult his convenience in deciding where to go. The result, meanwhile, is an incalculable impulse given to the cause of education, and so great an uplifting of the profession that leaders are now sought at salaries which would have seemed fabulous a few years ago. And so it has come to pass that even the average teacher in America plans to spend from two to six or eight weeks in careful study.

Closely related to the summer school and the problem of growth is the question of the teacher's reading. We are accustomed to speak of certain books as good summer reading. If there is a class of persons who need a certain amount of light reading it surely is the hard working teacher. But it seems worth while to say, in passing, that in view of the remarkable output of really good books which are not light in the sense of being trifling, nor yet heavy in the sense of requiring concentrated thought, no one, and least of all, a teacher, is justified in reading trash. So the problem of summer reading for the teacher is one that deserves careful thought. For even an abundance will not insure against mistakes in choice. A year ago THE EDUCATOR ventured to recommend six books for careful reading—two professional, two in history, two in fiction. A similar suggestion for this summer might include Motley's *Rise of the Dutch Republic* (Harper & Bros.), Frederick Harrison's *Tennyson, Ruskin, Mill and Other Literary Estimates* (Macmillan), Ely's *Monopolies and Trusts* (Macmillan), Tolstoi's *Resurrection* (Dodd, Mead & Co), Thompson's *Biography of a Grizzly* (Century Company), Johnston's *To Have and to Hold* (Houghton Mifflin). It is certain, of course, that many of our readers are already familiar with these books, or at least with some of them. The small list is merely suggested with the conviction that every book is worthy and that the reading of them will give satisfaction, and help, and hence pleasure. Another hint may be found in the books recommended by Professor James in his *Talks to Teachers: The Christian's Secret of a Happy Life*, by Mrs. Hannah Whitall Smith; *Power Through Repose*, by Miss Annie Payson Call; *As a Matter of Course*, by Miss Annie Payson Call; *The Practice of the Presence of God*, by Brother Laurence, being Conversations and Letters of Nicholas Herman of Loraine, Translated from the French; "The Lantern Bearers" in *Across the Plains*, by Robert Louis Stevenson; *The Religious Aspect of Philosophy*, by Josiah Royce; *The Prelude*, Wordsworth; *The Story of my Heart*, by Richard Jefferies; "Crossing Brooklyn Ferry," Walt Whitman in *Leaves of Grass; Calamus*, by Walt Whitman; *War and Peace*, by Tolstoi; *Idle Days in Patagonia*, by W. H. Hudson; *The Workers*, by Walter Wyckoff; *Sermons, Fifth Series*, by Phillips Brooks; *Essays by a Barrister*, by Fitz-James Stephen.

Then there is the problem of summer travel. Better salaries are bringing this means of education and pleasure within the reach of a constantly growing number of teachers. Railroads and summer resorts are encouraging the summer outing by every inducement possible. There is always the summer session of the N. E. A. which is the great opportunity of the year for those within whose means it may fall. To suggest the study of the geography and the history of the places to be visited or of the country passed through may savour too much of the schoolroom, as may also the advice to keep a note-book of impressions. But we do not travel merely for the day. Our power as teachers must be largely increased by every extended trip with ears and eyes open, while the use of pencil and note-book will not only help us to see straight but also to remember many things that would otherwise pass with the moment.

THE NORTHERN MUSE.

The Northern Muse looks up
Into the ancient tree,
Where hang the seven apples
And twine the roses three.

I heard, like the eternal
Susurrus of the sea,
Her *"Scire quod sciendum
Da mihi, Domine"*

—Bliss Carman in the June Atlantic.

THE CHILD AND THE SCHOOL.

VIEWS OF REPRESENTATIVE MEN.—V.

I HAVE been requested to give, in as few words as possible, what I think the public schools should do for the children.

This question is largely answered in knowing what will be the demands made upon the children when they go from the schools. Do we want young people who have knowledge that will give them power to advance selfish purposes only? Certainly not. Do we want young people who, on account of a false notion of education, wrap themselves up within themselves, as much as to say, "I am holier than thou?" Certainly not. What we need is young people with warm, brave hearts, who have already been taught that life is one continued struggle, and that he who gets the most happiness out of it is the one who is willing to enter the midst of the fray; is the one who has mental training which gives culture and polish, and at the same time has that training that will cause him to go out for those less fortunate than himself, and help them to a brighter and happier life.



H. B. BROWN.
President Northern Indiana Normal School.

To have such young people come from our schools they must have some reason for studying a subject other than the fact that it is found in the curriculum, or that the teacher says it must be studied. They must see in every subject pursued that the power acquired will be helpful to them in their struggle for existence. For, whatever may be said about an education, this much is true: If it does not prepare the young person so that he will be able to take care of himself and thus not become a burden on society, it is practically valueless. More than this; it must prepare him so that he may not only take care of himself, but may also help to care for others. He must have that nobleness of soul that will make him realize that all are brothers.

If then the school shall send out, not a mature product, but a thrifty growing plant which will develop into a strong helpful character, it will have performed at least a large portion of its duty.

H. B. BROWN.

THE TEACHER.

By ARTHUR S. HATHAWAY.

(Concluded from May.)

HOWEVER high I may have placed the calling of the teacher, there is another and a practical side to the question, when we come to the exemplification of that calling by those who pursue it. How many are actuated by a sense of the great power that lies in the hands of the teacher, and are impressed with the serious responsibility that it engenders. I know that the ranks of the teaching profession must be filled with many large-hearted men and women whose work is a labor of love, whose aspirations are high, whose inspirations noble. Yet there is an all too large a number who fail to meet even the most fundamental requirements of a good teacher. At the head of the list of requirements for a good teacher, I should place this feeling of the exalted position occupied by the calling. There is unfortunately an impression among the mass of the people that any one who has been through the secondary schools is thereby fully qualified, mentally, to teach in those schools. There is no possibility of estimating the evil effects of this inbreeding, as I may call it, by which a scholar who passes through the common schools is immediately selected to teach in those schools without undergoing a more extended and higher preparation, and some demonstration of his fitness for a teacher. Its consequences are often disastrous in perpetuating evils in our common school system, and also in diverting them entirely from their true educational purposes. Hundreds of so-called teachers thus enter a profession for which they are neither prepared nor adapted, and without inclination to teach except as a makeshift or because they seem fit for nothing else. Of course, not all who enter the ranks of teachers, actuated by temporary reasons, fail to make themselves what they ought to be, respecters of the dignity of their calling, and successful in carrying out its duties, just as on the other hand, not all who feel that they have the call to teach and desire to make it their life work become thereby proper and successful teachers.

To that requirement of a teacher that he should have the utmost regard for the dignity of his calling, and a purpose to meet its demands for the best that is in him, I would add another and equally important condition. The one who is fitted to teach must have the power of understanding truth. This does not mean an aptitude for learning truth, but the power of seeing into it, which is a different matter. One may learn easily, but not learn well. The student may pass through all his grades, receive his diploma at a normal school or university, and take rank as an excellent scholar, and yet not be fitted to teach, because he does not understand truly. To understand a subject involves the capacity of seeing its difficulties, and the power of overcoming those difficulties to one's own mind, and therefore to the minds of others, in a variety of ways, that have the mark of straightforward logic and plain common sense, without any of the elements of sophistry or quackery, which are all too common, in class-room and in text-book. This power of understanding creates in one naturally the desire to have others know and appreciate what one himself enjoys, and it carries with it the ability to direct the mind of the student to the salient point of the subject, the fundamental idea that underlies its development, and the essential features to be mastered in conquering it. This power must be possessed naturally to some extent, but it can be improved and perfected by proper effort and training. The power may exist, but lie dormant, because never called into action under the inductive influence of a true teacher. The great trouble with our common schools today is in the repression rather than the development of this insight and power of true acquisition.

The consequences of false accentuation in educational matters have been increased by the inbreeding effect to which I have referred. However important routine and method may be, its gradual substitution for the true elements of education is a vital defect in any school. It has resulted, it is true, in smoothing and polishing the outward shell of education, but the true kernel within has been left to shrivel and dry.

The masses of the people, those whose chil-

dren are being educated, are very apt to take the show for the substance. A demand for show is created, and straightway supplied. What wonder that the student brought up in the regular routine of lesson and recitation, of punctuality and order, should come to regard these as the essential elements, and in his turn emphasize them still more. Everything must be done just so; the lesson repeated as it is in the book, the example worked according to a set form, and the minds of all the children, as diversified in their originality as in their types of individuality, must conform to one model or else their work is wrong. Truth and substance are as nothing, form is everything. If form be attained, and routine carried out, the teacher is satisfied and the underlying truth which it is the real object of true education to acquire, and which is independent of form, and must appeal to different minds in different ways, is wholly obscured and neglected.

The whole effort of many schools is to drill memory at the expense of mind. Memory is a good thing, a necessary instrument, a useful servant of the mind, but to reverse the natural order and subject mind to memory is a travesty on education. The workman must be taught to handle his tools in the best and most perfect manner. The student must be taught to do a few things almost mechanically; as for example, to add, subtract, multiply and divide rapidly and correctly, to read well, write neatly, and spell accurately, but beyond these few simple and necessary elements of practical life, which are all that need be mechanically taught in elementary schools, there is absolutely no further need for restricted ways and methods, and for routines that crush out the very essence of originality.

One of the reasons that is urged for compelling compliance on the part of the student with the language of the book, and the forms that it supplies, is that the language and the methods are carefully thought out and arranged, so as to be the best that there are; and the student should, therefore, be taught these instead of the faulty language and the imperfect ways that he would himself devise. In the first place the premises are very often wrong, as we find them exemplified in our common school text-books; and in the second place, the conclusion drawn from the premises is incorrect. There is hardly a text-book in arithmetic, say, in which I could not pick flaws of a serious character as to method and explanation. They certainly would not suit my point of view if correct, and often, a labored form of work and accompanying explanation is nothing more nor less than nonsense, embodying some idiosyncracy due to the defective learning of the author, that has become with him a hobby. On the other hand, assuming the language and forms to be, by some rare combination of circumstances, entitled to the claim of being the best, it does not follow that the student should be taught them mechanically. He is entitled to know why they are the best and the reasons for adopting this or that form of statement rather than some other; and this knowledge can only come by development on his part. The student is to be entitled to more credit, rather than less, if he works out an example and explains it correctly without following the book. The inculcation on the part of the teacher even of reasons for so reasoning, and of discussion of methods of thought, as well as of thought, affords opportunities for the teacher to develop in the student by suggestion and correction a knowledge of the true principles of good form and aids him in the acquisition of originality and power of thought that outweigh the mere gain in mechanical detail which follows the rigid observance of book forms and methods, however perfect the latter may be.

The aim of education is to develop originality and diversity of thought, not sameness, and a common pattern of ideas. To compel acquiescence in certain forms is not to teach good form but to set up form as the essence of education. There is, in general, no one best way of doing things. It is in the variety of ways that may be developed from the understanding of the principles and the fundamental ideas of a subject, that true education is evolved. The best teachers are those who ignore form and look to the development of the understanding.

If I were asked in what respect our common schools were most open to criticism, I should say that it was in their natural tendency to develop superficiality and sameness of individuality. Too much ground is sought to be covered, too little is covered thoroughly and understandingly. After all, the man is quite thoroughly educated who can read well, write well, figure well, and who understands what he does. He has in himself the elements of education whereby, with

proper effort he can become self-educated in all the needs of practical life, and even in its higher development of art, literature and science. I do not say that these are all a student should be taught, but better these thoroughly, and less of others in the elementary grades, than many things so immaturely. Take one subject, and the criticism still holds. In arithmetic, even, there is much that is needlessly taught. The essential parts are addition, subtraction, multiplication, division, fractions and the decimal system, and tables of measurement. What is needed above all is training in mental computation. I should insist upon training in mental arithmetic, so far as it affects simple computations, and exercises in fractions, with accompanying word reasoning. This could replace a large part of the exercises in so-called business arithmetic; such as partial payments, brokerage, etc., which are only so many examples in arithmetical computation, of very doubtful practical utility, if we consider present business methods.

I wish here to acknowledge my indebtedness to Colburn's *Mental Arithmetic*, an old-fashioned book in our day, perhaps. The methods of mental attack that I learned from that arithmetic remain with me to this day, and when I see the long uncouth methods of arithmetical work practiced by many students at the board, I feel how much they need the shortening and condensing processes which a little exercise in the elementary principles of mental computation would give them, with the result that their work would become shorter, more accurate, and better understood by themselves. I am constantly met by a most serious difficulty of students in their inability to reduce complex fractions to simple ones, except by going through long and stilted forms of written work, in which error is almost sure to creep, from the multiplicity of operations involved, and the board space covered. It seems impossible for most students to take advantage of some slight change of form that can be mentally pictured; such as, inverting a fraction and multiplying, in order to divide by it, etc., and I can only think that this is due to lack of training in mental arithmetic. The arguments that I should urge in favor of mental arithmetic are three-fold: first, it encourages a sustained effort of the mind in following details and retaining fundamental principles; second, it is one of the most important methods of shortening arithmetical work, with a probable gain rather than loss of accuracy, because there is less liabily to error on account of the absence of confusing and needless details; thirdly, it is a most valuable preparation for appreciating and understanding algebraic analysis, since the habit of thinking of quantity and the relations of quantity mentally, is just the point of view that is required in algebra, in dealing with letters as the representatives of quantity, since it is only a step from the mental picture to the lettered representative. It is this power of seeing beyond the symbols employed into the meaning of those symbols, the ability to translate them into a full and complete language, and to read them as one reads thoughts conveyed by words, that constitutes true mathematical insight.

The same is true everywhere. Everything is simple when we understand it, and this means, that there is nothing difficult in itself which any one has ever understood. If we can acquire the proper fundamental ideas, the true elementary conceptions of a subject, and make them by constant repetition, and verification, a part of our inner consciousness, then the whole subject becomes as an open book before our eyes, in which we can read, and understand, and enjoy. If, however, we begin wrong, and master this mechanical detail, and that rule, thinking that we are learning because we are doing what others do, then the farther we progress, the greater the difficulties that crowd upon us, until a point is reached in which the mind revolts from pure exhaustion and misapplied effort. In the beginning, the right way is not harder than the wrong; it is simply slower, and requires the exercise and development of thought.

I have taken almost exclusively examples from that department of teaching with which I am familiar. There are certainly analagous illustrations in other departments, and I think that I shall voice the sentiment of every earnest teacher that the great need of teaching is not to cover many subjects, or many topics in each subject, but to present a few subjects in a thorough manner. The gain in this respect is decided both as to time and effort. There is an old adage, to look out for the man who knows one thing thoroughly. This means, that such a man is one whom we may expect to see succeed. He is already thoroughly educated, which means trained in exact ways of thinking

and ready and thorough methods of acquisition, and such a person may be almost said to pick up the knowledge that he may require in other directions. There is no subject studied in our schools that is not largely forgotten by the recipient before he is called upon to make practical use of it. If the student has been taught how to learn properly, and the fundamental ideas of the subject were once imparted to him thoroughly, it is only a matter of a short time before he will acquire the forgotten matters of detail that he needs, and perfect himself in them as never before.

In discussing the subject before me I have not intended to be more than general, with perhaps a few special illustrations. It would be impossible to go into a thorough discussion of the subject of teaching in so short a paper. I have endeavored to present what I consider the vital and essential elements of a teacher, which may be summed up briefly as consisting in earnestness of purpose and clearness of thought. These are also the essential characteristics for success in any profession. The average individual who possesses these two qualities of earnestness of purpose and clearness of thought can succeed in almost any direction in which his own intelligence will permit him to make the trial. He can overcome apparently serious defects, and seemingly insurmountable obstacles. He can apply to the acquisition of the necessary details and fundamental habits that lead to success the earnestness of purpose and clearness of thought that are his predominating characteristics. There are no set forms into which a teacher must be moulded, any more than there are for other professions. The expectation of any student that by pushing himself in at the entrance of a normal school, and permitting himself to be ground out at the exit, he thereby becomes possessed of the essential qualities of a teacher, is a delusion and a snare. When a normal school becomes by reason of its earnest and intelligent teachers in every department, a sifting, as well as a training school, selecting the good from the bad, emphasizing system the least, common sense and intelligence the most, it can become a great force in improving and elevating the common schools of the state. When, however, it emphasizes routine at the expense of originality, and instructs the teacher to lean upon formal routines, rather than methods of self-adjusting and inquiring thought and investigation into the individual needs of the student, it becomes the preserver of all that is evil in the school system, fostering its defects, and lowering its educational efficiency.

In conclusion, I may say a word as to the rewards of the teacher. They are not pecuniary. The necessary ability to succeed as a teacher would gain double or treble the pecuniary reward in almost every other profession. Almost every prominent teacher can point to sacrifices made in this direction in accepting his calling. Those labors that bear upon the immediate necessities and pleasures of to-day, make their demands, and find them granted. Those efforts whose ultimate and most important results appear only in the future, and can be forborne to-day without immediate serious consequences can never command from the present what might be regarded as justly their due. It is human nature as it is, although not, perhaps, as we might flatter ourselves that it should be. For this reason, no one should adopt the teacher's profession who is not prepared to accept in lieu of pecuniary results that other and greater reward that follows from the satisfaction of labor well done, and a position of influence and respect thereby gained. To the true teacher there can be no higher reward than the knowledge that his individuality has been impressed upon the rising members of the younger generation; there is no greater pleasure than to recognize among the names that are coming to honor and success, many of his loved pupils, whose character and worth he knows perhaps better than their own parents and immediate friends, and to feel that his efforts have not been without weight in developing that character, and in laying the foundation of that worthiness; and above all there is no fame so gratifying as the well-earned esteem and regard of such pupils.

ROSE POLYTECHNIC INSTITUTE.

THE GROWTH OF THE ALLEGORY.

A STUDY IN "THE IDYLLS OF THE KING."

By ANNA B. COLLINS.

(Concluded from May.)

IN *Pelleas and Ettarre*, the spiritual beauty of Pelleas is contrasted with the sensual beauty of Ettarre. The true, pure love of Pelleas is mocked by Ettarre, his trust betrayed by Gawain. Percival, next to Galahad in goodness and purity, tacitly acknowledges the sin of Lancelot and Guinevere, and has no answer to the question,

"Have any of our Round Table kept their vows?"

The Idyll closes with Lancelot and the Queen confronting each other—

"And each foresaw the dolorous day to be;
And all talk died, as in a grove all song
Beneath the shadow of some bird of prey;
Then a long silence came upon the hall,
And Modred thought, 'The time is hard at hand.'"

Though the author himself spoke of the Idylls as they appeared in 1870 as the "whole series," and explained that he "here connected the earliest written of the poems with the rest according to an early project, yet in 1871, he added another Idyll, *The Last Tournament*. It would seem that in reviewing his "whole series," he found nothing that explained the line,

"Then came the sin of Tristram and Isolt,"

in *Guinevere*, and that *The Last Tournament* was written to render that line clear. As *Pelleas and Ettarre* showed Arthur's court in the height of its corruption, so *The Last Tournament* shows it in process of dissolution. The fool, Dagonet, is the only one left at Camelot who remains true to himself and loyal to his king. The sin of Lancelot and Guinevere is painted in darker colors in the characters of Tristram and Isolt. The whole poem is full of grief and foreboding; Arthur departing upon his expedition against the heathen in the North, is filled with a vague suspicion:

"[Is] mine the blame that oft I seem as he
Of whom was written, 'A sound is in his ears'?
The foot that loiters, bidden go,—the glance
That only seems half-loyal to command,—
A manner somewhat fallen from reverence—
Or have I dreamed the bearing of our knights
Tells of a manhood ever less and lower?
Or whence the fear lest this my realm, upreared,
By noble deeds at one with noble vows,
From flat confusion and brute violences
Reel back into the beast and be no more?"

As Arthur rides away, his queen looks from her bower and the strange rhyme,

"From the great deep to the great deep he goes."

crosses her memory. Lancelot permits the laws of the tourney to be broken. One damsel complains, "All courtesy is dead," another, "The glory of our Round Table is no more." The queen retires to her bower—

"And in her bosom pain is lord."

The king has made "all the ways safe from shore to shore, and yet in his heart pain is lord." The poem closes with the sob of Dagonet:

—'I am thy fool
And I shall never make thee smile again."

The idea that Arthur is more than man is touched again and more strongly in Tristram's description:

"'Man, is he man at all?' methought, when first
I rode from our rough Lyonnesse, and beheld
That victor of the Pagan throned in hall—
His hair, a sun that rayed from off a brow
Like hillsnow high in heaven, the steel-blue eyes,
The golden beard that clothed his lips with light—
Moreover, that weird legend of his birth,
With Merlin's mystic babble about his end
Amazed me; then his foot was on a stool
Shaped as a dragon; he seemed to me no man,
But Michael, trampling Satan."

From the standpoint of the allegory, the productions of 1872 are very significant; in this year *Gareth and Lynnette* appeared, lines *To the Queen* were appended to the Idylls, and some passages were inserted in earlier poems. *To the Queen* contains the author's comment on the Idylls:

—"This old imperfect tale
New-old and shadowing Sense at war with Soul."

The marriage song was inserted in *The Coming of Arthur*. The trumpets blew, and the burden of the song that Arthur's knighthood sang was,

"That God hath told the king a secret word."
"The king will follow Christ, and we the king
In whom God hath breathed a secret thing."

This connecting of Arthur with God and Christ gives to him a greater spiritual significance and emphasizes the idea that Arthur symbolizes the Soul. Notice that this marriage song is inserted in *The Coming of Arthur* when he has conquered his foes, established his throne, organized his Round Table, won his Queen, and all things bid fair that they 'reign and live and love, fulfil his

boundless purpose, and make the world other;' and at the same time, lines 9–28 are inserted in *The Passing of Arthur*. The King says:

"I found him in the shining of the stars,
I marked him in the flowering of his fields,
But in his ways with men I find him not.
I waged his wars, and now I pass and die,
O me! for why is all around us here
As if some lesser god had made the world,
But had not force to shape it as he would,
Till the High God behold it from beyond,
And enter it and make it beautiful?
Or else as if the world were wholly fair,
But that these eyes of men are dense and dim,
And have not power to see it as it is;
Perchance, because we see not to the close;—
For I, being simple, thought to work his will,
And have but stricken with the sword in vain;
And all whereon I leaned in wife and friend
Is traitor to my peace, and all my realm
Reels back into the beast and is no more.
My God, thou hast forgotten me in my death;
Nay—God my Christ—I pass but shall not die."

The burden of these lines is that sense has conquered in the strife, but the last line contains a gleam of hope.

In the *Gareth and Lynnette* of this year, 1872, Arthur's mysterious origin is again alluded to; the gateway to Camelot with its symbolical Lady of the Lake with her sword and censer and

—"Those three queens the friends
Of Arthur who should help him at his need"

is described; the old Seer's answer to Gareth implies that all the surroundings of the king are the work of enchantment. The city itself was built by "a fairy king and queens to the music of their harps."

"And there is nothing in it, as it seems
Saving the king; tho' some there be that hold
The king a shadow, and the city real."

Thus to the sensual, the city is real; the king, symbolizing the soul, a shadow; while to the spiritual the king, the soul, is the only reality, all material things but fleeting shadows. Besides these things in the very opening of *Gareth and Lynnette*, there are allegorical names throughout; Gareth's sister lives in Castle Perilous; she is besieged by three knights calling themselves the Day—Morning-Star, Noon-Sun, and Evening-Star—and a fourth calling himself Night, or oftener, Death. The allegory of the Day is carried out in the contests between Gareth and the three knights:

"Then at his call, 'O daughters of the Dawn,
And servants of the Morning-Star, approach,
Arm me,' from out the silken curtain-folds
Barefooted and bare-headed three fair girls
In gilt and rosy raiment came; their feet
In dewy grasses glistened; and the hair
All over glanced with dew-drop or with gem
Like sparkles in the stone Avanturine.
These armed him in blue arms, and gave a shield
Blue also, and thereon the Morning-Star."

Lynnette points out the second knight as

"The second brother in their fools parable"

He is described thus:

"So when they touched the second river-loop,
Huge on a huge red horse, and all in mail
Burnished to blinding, shone the noonday sun
Beyond a raging shallow. As if the flower,
That blows a globe of after arrowlets,
Ten thousand-fold had grown, flashed the fierce shield,
All sun."

The third knight is announced as the "third fool in their allegory," and there he stood "all in a rose-red from the west." When he called for his arms

"With slow steps from out
An old storm-beaten, russet, many-stained
Pavilion, forth a grizzled damsel came,
And armed him in old arms, and brought a helm
With but a drying evergreen for crest,
And gave a shield whereon the Star of Even
Half-tarnished and half-bright, his emblem shone."

The whole significance of the Idylls is definitely disclosed in the sculptured entrance to the cavern:

"Anon they passed a narrow comb wherein
Were slabs of rock with figures, knights on horse
Sculptured and deckt in slowly waning hues.
'Sir Knave, my knight, a hermit once was here
Whose holy hand hath fashioned on the rock
The War of Time against the Soul of man,
And yon four fools have sucked their allegory
From these damp walls, and taken but the form.
Know ye not these?' and Gareth looked and read—
* * * * *
'*Phosphorus*,' then '*Meridies*'—'*Hesperus*'—
'*Nox*'—'*Mors*,' beneath five figures, armed men,
Slab after slab, their faces forward all,
And running down the Soul, a Shape that fled
With broken wings, torn raiment and loose hair,
For help and shelter to the hermit's cave,"

Gareth finally meets the fourth knight, Death, seated

"High on a nightblack horse, in nightblack arms,
With white breast-bone and barren ribs."

In the combat, Death is vanquished, his helmet cloven thro'

—"And out from this
Issued the bright face of a blooming boy,
Fresh as a flower new-born"

This symbolizes the idea that out of Death comes Life, or that through Death the Soul enters upon a newer, fuller life. Of all the Idylls, taken singly, *Gareth and Lynnette* is fullest of direct allegory.

In 1874, a new passage of 150 lines was inserted in *Merlin and Vivien*. These lines not only ascribe motive to Vivien but also help out the allegory by showing Vivien as the incarnation of evil directly opposed to Arthur, the influence for good.

—"Then as Arthur in the highest
Leavened the world, so Vivien in the lowest,
Arriving at a time of golden rest,
And sowing one ill hint from ear to ear,
While all the heathen lay at Arthur's feet,
And no quest came, but all was joust and play,
Leavened his hall. They heard and let her be."

Besides these 150 lines at the beginning, lines 191–198 are not found in the edition published in 1863:

"Then fell on Merlin a great melancholy;
He walked with dreams and darkness, and he found
A doom that ever poised itself to fall,
An ever-moaning battle in the mist,
World-war of dying flesh against the life,
Death in all life and lying in all love,
The meanest having power upon the highest,
And the high purpose broken by the worm."

These lines not only furnish a bit of foreshadowing, but also bear upon the central theme of the allegory in the line, "World-war of dying flesh against the life," and, "The meanest (Vivien) having power upon the highest (Arthur), and the high purpose (of Arthur) broken by the worm (Vivien).

In 1885, *Balin and Balan* was published. This, the latest of the Idylls, was announced as an introduction to *Merlin and Vivien*. The whole is an attack upon sensual religion. In the working out of the allegory it further emphasizes Vivien's character as "Sense at war with Soul." In the lines added to *Merlin and Vivien*, she is spoken of as born "Among the dead and sown upon the wind;" here she is "a wanton damsel" who "dwells among the woods," tempting men "in the Mouth of Hell."

Aside from the later Idylls and the longer passages inserted in the earlier ones already noted, there are some slighter changes which yet have a bearing on the growth of the allegory. Most of these changes bear upon Tennyson's conception of King Arthur. In 1862, he was "my own ideal knight," later "my king's ideal knight." In the lines "To the Queen," 1872, Tennyson gives his conception of King Arthur in which he shadows

—"Sense at war with Soul
Rather than that gray king, whose name, a ghost,
Streams like a cloud, man-shaped, from mountain peak,
And cleaves to cairn and cromlech still; or him
Of Geoffrey's book, or him of Melleor's, one
Touched by the adulterous finger of a time
That hovered between war and wantonness,
And crownings and dethronements."

That the King Arthur of the earlier Idylls may accord with this evidently later conception, the changes made are for the purpose of freeing him from

"The adulterous finger of a time
That hovered between war and wantonness."

In the edition printed in 1863, when Arthur in *Lancelot and Elaine* sends Gawain in search of the unknown knight, he addresses him thus: "Gawain, rise, my nephew." The present edition reads, "Wherefore rise, O Gawain." In *Guinevere* of the earlier edition, Modred "is the nearest to the king, his nephew;" the later edition omits this description. Again, when the King leaves Guinevere, he says in the earlier edition,—

—"I must strike against my sister's son
Leagued with Lords of the White Horse."

The later edition reads

—"I must strike against the man they call
My sister's son—no kin of mine—who leagues etc"

In *Merlin and Vivien* of the earlier edition, the King is

"Vext at a rumor rife about the Queen;"

in the later, he is

"Vext at a rumor issued from herself (Vivien)
Of some corruption crept among his knights."

These changes free Arthur from all taint in his origin, and render the earlier Idylls more consistent with the later, in which Arthur is represented as "more than man."

Such changes as these in the earlier Idylls justify Luce in his judgment that Tennyson would have come nearer the truth had he said "By King Arthur, I gradually came to mean the Soul," rather than, "By King Arthur, I always meant the Soul."

Though the progress of time is very indefinite in the Idylls, yet the poet has managed the shifting seasons of the year so as to give a sort of allegorical setting to the whole. *It may symbolize the course of an individual life, in which "The war of Time against the soul of man" is portrayed, or it may be only a setting for the rise, prosperity, decay, and downfall of a nation. "The sacred altar blossomed white with May," when Guinevere was married; Gareth set out for Camelot in early summer; it was the mowing season in *Geraint and Enid;* Guinevere and Lancelot met among roses and lilies in *Balin and Balan;* a summer storm is brewing, when the wily Vivien works her will with Merlin; Guinevere flung the diamonds "thro' the casement standing wide for heat" in *Lancelot and Elaine;* the hollies were in bloom, when Pelleas met Ettarre and her train in the woods; it was "the yellowing autumn-tide," when the last tournament was fought, and Arthur returned,

"All in a death-dumb, autumn-dripping gloom;"

"That last wierd battle in the west" was fought "Among the mountains by the winter sea; and the poem closes with

"And the new sun rose bringing the new year."

* p. 56.

"That King Arthur symbolizes the Soul, and the Round Table, the passions and capacities of man" sounds very plausible, but if one tries to apply the statement strictly to the working out of the allegory, he soon loses himself in a dizzy maze, as I feel that I have done in trying to work out the allegory in *The Holy Grail*. The cleverest interpretation of the Idylls that I have met, is that given by Van Dyke. He, however, discards the idea that the poem, as a whole, is an allegory, pure and simple, and prefers to call the Idylls a series of parables. In each Idyll he finds a principal character that symbolizes Sense in conflict with another, symbolizing Soul.

To review briefly, then, the growth of the allegory, we find that Tennyson first treated the Arthurian legends in the form of lyrics; the earliest written Idyll, *Morte d'Arthur*, contains no allegory, the treatment being altogether epical; the *Four Idylls of the King* are studies of women in their relation to men, and while they may have a moral purpose, the treatment is, as yet, not allegorical. The allegory that is now in these earlier Idylls has all been worked in since 1870. In 1872, the poet declares that his "great poem" is an allegory, and the Idylls of this year mark the culmination of allegorical treatment. The later additions to *Merlin and Vivien*, and the latest Idyll, *Balin and Balan*, only give greater allegorical significance to the character of Vivien, and touch again the note already struck in *The Holy Grail*.

KOKOMO, IND.

CHARLESTON BY THE SEA.

JUDGING from the reports that come from Charleston, the people of that quaint city by the sea are preparing to take the teachers of the N. E. A., who visit them in July, right into their hearts and homes. Such a prospect is doubly pleasing when one reflects how often a city that has been chosen for a convention deliberately plans to exploit its guests by extortion of every kind. We could hardly expect that from Charleston, whose very name has long been synonymous with hospitality; but the committees intend to make it certain that the visitors shall be protected. Los Angeles set a high standard last year, but there is no doubt that the hospitality of the old South will be quite as cordial.

Some fear has been expressed by those who d o



FORT SUMTER.

not understand physical geography that the temperature of Charleston at the time of the meeting of the convention will be oppressive, but the official records of Charleston and the records of the United States weather bureau, covering a period of one hundred years, show that in no place in this country is the summer temperature more equable and pleasant than it is in Charleston. The range of the thermometer there is not nearly so high on the average as it is in Boston, New York, Asbury Park and Saratoga.



ST. MICHAEL'S CHURCH.

The chief purpose of inviting the National Educational Association to hold its convention in that city was to place the South in the closest possible touch with the educational interests of the world. It is hoped that there will be a large attendance from all the northern, eastern and western states—there is a certainty that the teachers of the South will be there in full force. What is needed in the South is encouragement of its educational interest, the elbow touch with the teachers of the nation, and this necessity should be impressed upon those who are really concerned about the illiterate conditions which prevail in a large part of the southern country.

Charleston is to-day the typical city of the South. Its name has always stood for pluck and valor. Its history is closely identified with the history of the United States. Established at Albemarle Point, on the west bank of the Ashley river, in April, 1670, it was named in honor of Charles Second, who had granted to the lords proprietors exclusively the land including the Carolinas.

The first French protestant immigrants who came here arrived in 1680 and they were followed in 1685 by great numbers of others seeking asylum from religious persecution in their native lands. The first settlers had come from England and Scotland, and these three strains united in making the city, which has ever since preserved their characteristics. The city to-day, which is in style very French in its architecture and in the courteous manners and dignified bearing of its best people, gives evidence of its English origin as well, in its mode of life, its customs, its ultra conservatism, and in the pluck and energy that have ever characterized its people.

In 1719 the people of Charleston threw off the yoke of the lords proprietors and placed themselves directly under the British crown, and in 1780 the town was incorporated as the City of Charleston. It is rich in historical incidents. It has passed through many deep waters and stands to-day stronger and more vigorous than ever—an old city still in a new country, true to its traditions, firm in its convictions, devoted to its memories and loyal to all its pledges.

There is no town on this continent which has more of quaint and artistic interest to please the eye and excite the fancy. For those who care to study its history it may be divided into five periods—Charlestown under the king; Charleston during the Revolutionary war; Charleston

after the Revolution; Charleston during the period of the confederacy; Charleston under the reconstruction, and Charleston as it is today, full of life and energy—the most beautiful and attractive port on the south Atlantic. One of the features that appeals to all intelligent visitors is the beautiful domestic life of its people. They live at home. They do not waste their time on club life; they do not care for society columns in the newspapers; they resent interference with their domestic concerns; they entertain most bountifully those whom they receive into their confidence.

The houses in the city are nearly all built with their narrow gable ends to the street and their broad sides, with spacious galleries at every floor, facing picturesque gardens filled with flowers and semitropical plants, and enclosed by high walls, over the tops of which straggling vines often climb, giving to the passer-by a suggestion of the richness of comfort to be found inside and the wealth of floral beauty in the garden spots. The doorways of the typical Charleston house open from the sidewalk, but only on to the lower piazza. In the centre of this lower piazza the main door of the house admits to a spacious hallway, with large rooms on either side and the stairway to the floors above, in early colonial style.

There is a charm in all these quaint things and ways that appeals to the artist and the teacher. It shows the people of these rushing days how sweet and satisfying must have been the life that was lived in the long ago. No description, however, could give any idea of what there is to be seen and felt here—two civilizations at one and the same time: the modern life in the streets and stores and the ancient ways within the homes.

Julian Ralph, writing of Charleston in *Harper's Magazine*, says:

"In nothing is Charleston more admirable and interesting than in its church buildings. Better yet, the people know this—which is not always the case in such matters—and are as proud of them as they should be. The two old English churches of St. Michael's and St. Phillip's are to the city what superb statues are to a park. They are beautiful ornaments—monuments to a wealth of pride and taste, which may exist there, but will not be easily excelled in any modern memorials. But the Huguenot church, the only one in America, is equally beautiful in its history. Its pastor, the Rev. Charles S. Vedder, has written this concise statement of its claims upon those who venerate the cause of religion, and especially that of those liberty-loving exiles of old. These are his words: 'Established by French protestants, refugees from France on account of religious persecution, their descendants venerating the steadfastness to principle, so conspicuous in their ancestors, continue to worship to-day with the same liturgy, (translated,) published at Neufchatel in 1737 and 1772, in this, the only Huguenot church in America.'

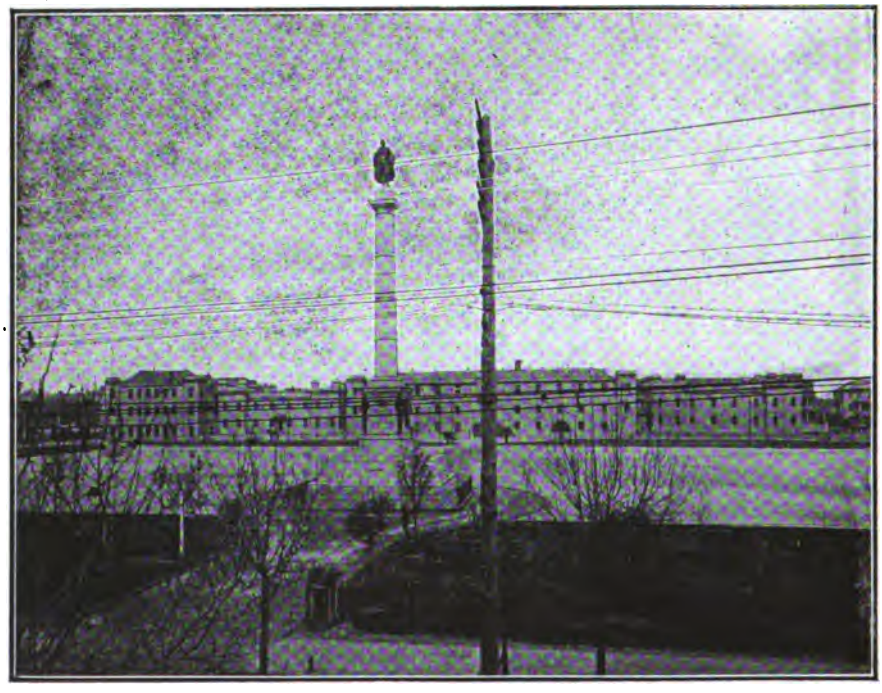


COLLEGE OF CHARLESTON—FOUNDED 1785.

"The two Episcopal churches of St. Phillip's and St. Michael's are, as I have intimated, the most beautiful church edifices in the Carolinas. They ennoble almost every view of Charleston that one gets. St. Phillip's has the third building in which the congregation has worshipped, but it copies the second one, destroyed in 1835, of which Edmund Burke says that it was 'executed in a very handsome taste, exceeding everything of that kind which we have in America.' The dramatic poem, still recited wherever English is spoken, which tells of the daring of a slave boy who climbed a steeple to put out the fire that threatened its destruction, wherefore his master set him free, tells the true story of an incident in the history of St. Phillip's. The poem credits the incident to St. Michael's, but that is a mistake.

"Both of these churches are of the general style of our old St. Paul's in New York, but both are very much handsomer. St. Michael's is said to be very like St. Martin-in-the-Fields, in London, so familiar to most Americans who have visited that city. The steeple is made up of a series of graduated chambers, so well proportioned that each new study of them is a fresh delight. It is no wonder that the Charlestonians like to mention that it has always been a tradition that Sir Christopher Wren was the designer of the building, though there is better reason to believe that it was Gibbs, the architect of the London church which it so greatly resembles. In the steeple hang the bells, which are Charleston's most beloved possession. Not only were they imported from England in 1764, but when the British retired from the city at the close of the Revolution they were seized as a military perquisite and sent to London. There a Mr. Ryhiner, who had been a merchant in Charleston, bought them and sent them back to Charleston. In 1861 they were sent to Columbia for safety, and when that city was burned by the Federal troops they were ruined by the flames. In 1866 they were sent back to England to be recast by the descendants of the original founders, and in another twelve months they were back again, practically the same eight bells, but held by the government for the payment of $2,200 duty. That was paid and the money has since been refunded by special act of Congress."

The most ancient and interesting seat of learning in Charleston is naturally the college of Charleston, founded in 1785. If it be true that a tree is to be judged by its fruits, the college of Charleston may well be a pride to Charleston and to South Carolina. The college is an endowed institution, independent of sectarian or political control. No spot in the city is more attractive than the college campus, shaded by its ancient live oaks and surrounded by its venerable buildings. The style of architecture, a combination of true colonial and classic Greek, simple and correct, seems to befit the home of a college founded by Revolutionary patriots. For many of the founders of the com



SOUTH CAROLINA MILITARY ACADEMY.

monwealth were the founders of this old college; notably, Arthur Middleton, Thomas Heyward, Jr., both signers of the Declaration of Independence, and General Moultrie, of Revolutionary fame; also Charles Pinckney, John Rutledge, and Charles Cotesworth Pinckney, all, at a later period, signers of the Constitution of the United States.

The South Carolina military academy was founded in 1842 and forms a part of the state university. The cadets are of two kinds, beneficiary cadets, sixty-eight of whom are supported by the state, and who in return bind themselves to teach for two years in the public schools of South Carolina, and pay cadets, who pay annually $300 in full for board, clothing, tuition and medical attendance. The curriculum, while it does not include the classical branches, embraces a study of the modern languages, mathematics, English literature and science. The aim of the academy is not only to secure that mental training which results in culture and enlightenment, but by means of military discipline to teach self-control and subordination to law and order in early youth, when the character is receiving its life-impress.

The high school of Charleston, founded in 1839, is one of the best classical schools in the country and has few equals in the South. A liberal income from the city enables it to be maintained at a cost to the pupil of forty dollars a year. It is a strictly classical school, the study of Latin and one other language being obligatory on every pupil. There is a preparatory department for boys under twelve years of age, and on the completion of the regular graded course of four years the pupil is well prepared to enter college.

The Porter academy, founded in 1867, at a time when the sons of an impoverished gentry were growing up in utter ignorance, has given a school education to 3,600 of this class, 3,000 of whom have paid little or nothing—the majority nothing. This great and patriotic work was recognized by the United States government, which in 1889 deeded to the Porter academy the old Charleston "Arsenal" in fee simple, on condition that it be always used for purposes of education. The rector, the Rev. A. Toomer Porter is one of the ablest and most forceful men in South Carolina; his work perpetuates his name forever among his people.



MENNINGER HIGH AND NORMAL SCHOOL.

Public higher education for women in Charleston is represented by the Memminger high and normal school, founded in 1857. It aims to be a training school for teachers. It is open to young women who have completed the course of study prescribed for the grammar schools of the city of Charleston on presentation of certificate, and to others after examination on the requirements of the special class for which they apply. The reputation of the Memminger school is deservedly high and it fills an indispensable want in the community.

Quoting again from the fine description by Julian Ralph:

"After one good look around Charleston, the thing which most amazed me was that no one had ever happened to prepare me for finding a city so unlike our others that it actually may be said to be 'built sidewise,' as if all its houses were at odds with the streets. Strange also it seemed that no one had warned me that I should find it a water-color city of reds and pinks and soft yellows, and white, set against abundant greenery. Its own lovers, down there, like to speak of it as 'old and mellow,' but that expresses only a little bit of what it is.

"First, it is very beautiful; next, it is dignified and proud; third, it is the cleanest city (or was when I was there) that I have yet seen in America; and, last of all, it is a creation by itself—a city unlike any other that I know of. It is built on a spit of land with water on three sides, like New York, and this gives its people that constant and enduring delight which continual views of moving water never fail to provide. Part of its early history is that of a planters' summer resort, and something of that forgotten holiday air still clings to it. If it suggests any city that I have ever seen, it is New Orleans—perhaps because of an indefinable Latin trace that is seen in the stuccoed houses and walled gardens, and again, because of the important part the gardens play there and the profusion of flowers that results from them.

"Nothing in Charleston seemed more peculiar to me than the colony of buzzards, which the citizens have developed by taming and protection, and which spend a part of each day around the market in the very heart of the city. There one may almost stumble over these huge black birds, which are elsewhere scarcely seen, except at great heights, circling and sailing like creatures of another world. I one day counted thirty-eight buzzards on the cobble stones of the street, upon only one side of the market. They are quite as large as eagles, and as black and lustrous as crows, but have white legs and bare, wrinkled brown necks that make them look like caricatures of old-fashioned parsons in high 'chokers.' They are extremely ungainly, stiff-legged and awkward when they walk, and when they begin that flight which they are able to master, so that they appear even more at ease in the air than are fishes in the sea, they start out with a supremely ridiculous upward movement, during which their long legs hang down straight, and their heads and tails flap almost together on either side of their feet. They then look as if they were being lifted by a string around each one's middle, and were struggling to get free. I do not think they are the common buzzards, without which no view in the southern country is complete, but I could not find in book or acquaintance any enlightenment on the subject further than the jocular statement that they are called 'the Charleston canaries.'

"I quite boldly referred to the French appearance of the city during my visit, and, though there were those who upheld me in my opinion, one very prominent gentleman, himself of Huguenot descent, insisted that I was mistaken. He thought it more likely—almost positive—that the courtly manners and formal politeness that distinguished the leaders of Charleston's best society in the city's palmiest days, and that have by no means departed, were a direct inheritance from the French. But for the rest he insisted that such was the strength of the English domination, Charleston was always, and is to-day, pure English at all important points. In 1793 nearly 500 French refugees from San Domingo made Charleston their refuge, and one thoughtful citizen argued, without insistence, that possibly that mere essence, which made the place seem French to me, was due to the San Domingoans. However, the discussion was and will be futile, and for myself I can only say that much in the style of many of the houses suggests the same adaptation from the French that we see in and around New Orleans, and in the decoration and ornaments that continually confront a visitor the French style is pure and indubitable.

"From whatever its peculiar foreignness may be derived, Charleston is old and finished and complete—a small, inviting, pretty—a dignified, almost splendid, little city."

Mr. C. W. G. Hyde's New Story: A man went up to the ticket window at the railroad station and said to the agent, "I-i-i-i w-w-want a-a-a-a t-ticket to Boston and I-i-i-i-i want to go by f-f-f-f freight and not by express." The agent looked at him and said, "Why, my friend, you have chosen the slowest way to travel, why do you go by freight?" "B-b-bc-c-cause I have a-a-always f-f-f found it so hard to express myself."—*Exchange.*

MATHEMATICS.

EDITED BY

ROBERT J. ALEY, Ph. D., Bloomington, Indiana.

HISTORY OF ARITHMETIC.

XXIII. THE FIRST AMERICAN ARITHMETIC.

**Greenwood's Arithmetic.* The full title of the book is: "Arithmetick | Vulgar and Decimal | with the | Application | thereof, to | A Variety of Cases | in | Trade and Commerce. | Boston: N. E. | Printed by S. Kneeland and T. Green, for T. Hancock at the sign of the Bible and three Crowns in Ann Street. MDCCXXIX."

The author, Isaac Greenwood, was born May 7, 1702. He graduated at Harvard College in 1721, and seven years later was made professor of mathematics and natural philosphy in his alma mater. He was the first American to hold this chair, and his arithmetic in 1729 was the earliest arithmetic by an American author by nearly sixty years.

There are two copies of the arithmetic in the Harvard library and one in the library of congress. The table of contents is as follows: Introduction, Numeration, Addition, Subtraction, Multiplication, Division, Reduction, Vulgar Fractions, Decimal Fractions, Roots and Powers, Continued Proportion, Disjunct Proportion, Practice and Rules Relating to Trade and Commerce. The following sub-heads of the last chapter may be of interest: Fellowship, Barter, Equation of Payments, Loss and Gain, Allegation, Position, or the Rule of False Interest, Rebate or Discount, Annuities, and Of Reversions and Freehold Estates.

In the advertisement we find that "The Author's Design in the following Treatise, is to give a very Concise Account of Such Rules as are of the Easiest Practice in all the Parts of Vulgar and Decimal Arithmetic; and to illustrate each with such Examples as may be sufficient to lead the Learner to the full use thereof in all other Instances."

The following will explain a rather curious innovation: "The Reader will observe, that the Author has inserted under all those Rules, where it was proper, Examples with Blanks for his Practice. This was a Principal End to the Undertaking; that such Persons as were desirous thereof might have a comprehensive Collection of all the best Rules in the Art of Numbering, with Examples wrought by themselves. And that nothing might be wanting to favor this Design, the Impression is made upon several of the best Sorts of Paper. This Method is entirely new"

The paper used in the book is thick, the type large. Words and phrases to which the author desires to call special attention are printed in italic characters, and, as more than half the book is, in the author's eyes, important, more than half is printed in italics. The method followed by the author seems to be in most cases to give the rule in each subject, then examples illustrating the rule, then examples for the student, and finally the proof. There is very little explanation aside from the rule. Each example has a "blank" beneath it for the student's practice. There are no collections of examples as in modern books. At times, though not always, terms, such as annuity, interest, etc., are explained.

Mr. J. W. H. Walden from whom the above statement is taken adds, "The copy which I have before me (one of the Harvard library copies) would have an additional interest for some persons from the fact that on every page is the impress, not of a machine, but of a human hand. Each example has been worked out by some person with the greatest care and elaborateness."

*This account is taken from Greenwood & Martin's American Text-Books in Arithmetic.

SOME MISCONCEPTIONS OF NUMBER.

The December (1899) number of the "New York Teachers' Monographs" is devoted to arithmetic and methods of teaching arithmetic. It contains eighteen articles by as many leading teachers and superintendents. Every article is suggestive and stimulating; the entire monograph should be carefully read by every teacher of arithmetic. An article on the "Psychology of Number" is especially to be commended. The first article, "Number work in the Primary Schools" by Edward D. Farrell, associate superintendent of schools, New York City, however, contains some fundamental misconceptions of number which I wish to consider here.

(1) In the first place the author says: "Most of the arithmetics now in use are based on counting. They follow the methods elaborated by the early normal instructors. These teachers

followed the historical development of numbers." This in itself, is sufficient to commend the method of these arithmetics to the careful consideration of thoughtful teachers before abandoning it for some "new" or "ratio" methods that are attracting so much attention at present. The historical method of development in any subject has the first and strongest claim upon the teacher's attention. The history of the development of any subject furnishes the safest test for the innovations and fads that are continually being put forward. Real progress in educational methods comes from the improvement and adaptation of the historical development, rather than from the disregard of it.

(2) In the next place we read: "The authors of these books referred to recognize the importance of synthesis, analysis, and comparison. Synthesis and analysis are introduced simultaneously. Comparison follows quickly, but the fact that the objects used for development of number-concepts—beans, buttons, tablets, pencils, etc., resemble one another without approaching numerical equality, renders their comparison inexact. Such material only serves as a basis for mathematical reasoning when we begin with "Make-believe these pencils are equal," or "Suppose these blocks are equal." The material develops the qualitative idea of number. This idea is based on resemblance, while the quantitative is based upon equality." Here we have a fundamental misconception of number. It should be observed in the first place that number is neither *qualitative* or *quantitative* in the sense used here. Number does not take into account the equality or inequality of the objects under consideration either in respect to size, shape, weight, value, etc., or their likeness or difference in respect to color, odor, taste, etc. Number does not pretend to compare objects in respect to these properties. Distinctness of the objects is the only thing assumed in number. If the objects of a collection are distinct they may be numbered or counted. Number is a definite answer to the question, How many objects are there in a given collection? A comparison of two collections of pencils in respect to number does not involve the idea of the equality of the pencils in either collection or in the two collections. The child that has *five* pencils *two inches* long has just as *many* pencils as the child that has *five* pencils *six inches* long. If each child were asked the number of pencils he has, each would answer five. There is no "Make-believe the pencils are equal" implied in the answer. Things do not need to "approach numerical equality" (if such a thing be possible) or equality of any kind or even similarity in order to be counted and thus form the basis for number concepts.

(3) In the next place the author points out that the Grube method differs from the older one by introducing multiplication and division along with addition and subtraction. He then adds: "The material used (in the Grube method) is limited to a few simple forms, generally to inch cubes. The eye and the hand are so constantly exercised in uniting and separating these blocks that the pupils find it hard to separate the idea of a unit from the ever-present block. This *fixed unit* becomes a bar to the logical development of ratio." Here we have another erroneous notion of number and counting; viz., that in counting a collection of objects we select one of them as a unit of comparison, and regard the other objects as repetitions of this unit. Counting (number) and measuring are here confused. Measuring involves counting, while counting does not involve measuring. In measuring we select a definite part of the magnitude to be measured as a *fixed unit* and then separate the given magnitude into parts; i. e., distinct things, and then count these parts. Measuring is a more difficult process than counting, since it involves the latter. Measuring is one of the applications of number. The race learned to count discrete objects long before the measuring continuous magnitude was thought of; so also the child should and must learn to count discrete objects before he can measure continuous quantities.

In the above quotation we have a most excellent reason for getting away from the object in teaching number, and not a reason for adhering to the object by introducing a multiplicity of objects. The place of objects in teaching number is quite obvious. The first notions of counting and number should be obtained from discrete objects, number-relations should be discovered by their aid as long as is necessary, objects should then be abandoned and the number system with its properties should be studied in itself, later this knowledge of number should be applied to objects, discrete objects first, and lastly to the measurement of continuous magnitude. It must not be inferred, however, that as soon as the child has gained some knowledge of the number system he is not to apply this knowledge to objects; but that the earlier stages of number work should be devoted preeminently to a study of the number system and its properties.

(4) The last sentence of the above quotation involves another erroneous idea of number, viz. that number is a *ratio*. This idea of number

grows out of the fact that counting and measuring are identical, and that number has no existence or meaning except in connection with the objects. This, to say the least, is a narrow and distorted conception of number, and if carried out would destroy a large, in fact, the largest, part of higher mathematics. The *ratio* idea of number has been considered before in these columns and needs no further consideration here.

J. B. FAUGHT.

BLOOMINGTON, March 12, 1900.

THE ROMAN FORM OF WRITING 1900.

How shall we write 1900 in Roman letters? It has been fairly generally admitted that two ways are correct—namely MDCCCC. and MCM.—and that the latter is preferable. Now a correspondent maintains that neither of these is legitimate. He says:

"The year 1900 should be written MDCD. One important principle of the Roman system is that the most valuable digit is placed first, and then others as much as possible of gradually decreasing value, till the required number is complete. Thus MDCLVI. for 1656. Another is that four similar digits shall not follow each other. The exception to this latter rule which is found on the face of a watch is, as is well known, of merely mediaeval origin.

"Now, as the number which we desire to write is 1900, we commence with MD. To account for the remaining 400 we must accordingly resort to the device of placing a detracting digit before a digit representing exactly that much more than the required value, in this instance a hundred. Our 400 is, therefore, expressed by CD. and the entire 1900 is shown as MDCD."—*St. Louis Star.*

SOLUTIONS.

[Different answers are given, depending on the value of thickness taken.—ED.]

13. Problem 117, page 198.

How many layers of such gold would equal the thickness of a leaf of this book?

Thickness of book=⅞ in. No. of leaves in book (456+2)=228 leaves. Each leaf=$\frac{1}{228}$ of ⅞ in.=$\frac{7}{1824}$ in. $\frac{7}{1824}$ in.+$\frac{1}{1000}$ thickness of gold leaf=$\frac{7}{1824}\times\frac{261360}{1}$ =1,002+, about 1000 layers.

—JAMES L. ALLEN, Henryville.

14. Problem 34, page 327.

$80^2\times.7854$=5026.56 sq. rds. area of field. 6 a.=960 sq. rds., area of road. 5026.56+960=5986.56 sq. rds., area of field and road. 5986.56+.7854=7622.3+. $\sqrt{7622.3}$=87.3+, diameter of field, including road on opposite sides. 87.3—80=7.3, width of road on both opposite sides of field. ½ of 7.3=3.65, width of road.

—E. B. MOORE, Floyd's Knobs.

15. Problem 9, page 344.

To begin with, the problem cannot be solved, as it is given in the book; that is it is impossible to put the posts 8 feet apart around such a field. If we should put a post at the N. W. corner of the field and set them 8 feet apart the last, or 166th post would be at the N. E. corner. Now beginning at this post and putting them on the east side, the 82nd post would be just 4 feet from the S. E. corner, but the author evidently meant to place a post there so we would have 83 posts on the east side, 165 on the south side, 82 on the west side, 166 on the north side. (166+165+83+82)×.28 gives $114.08, cost of posts. 80 rds+80 rds+40 rds+40 rds=240 rds or 3,960 feet, entire distance around field.

The fencing is 6 in. wide so that four boards 1 foot long would be the same as two board feet.

3960×2=7920 board feet.

7920÷1000×$18.50=$146.52, cost of boards.

$146.52+$114.08=260.60, cost.

N. B. The difficulty perhaps was in counting the posts; we should remember it takes two posts for the first 8 feet.

—D. W. GILLESPIE, Burdick, Ind.

16. I offer the following reasoning on the process of solving No. 16 in the April EDUCATOR: Since each $80 is to purchase an acre of land, and since $80 bounds 6¼ sq. ft., then one acre is the same part of the tract, bounded by dollars, 80 to the acre, as 6¼ sq. rds. is of one acre; hence the solution is general and correct.

—D. W. LAWRENCE.

17. Three circles each containing 100 acres are tangent to each other. What is the area enclosed by them?

A circle containing 100 acres has a diameter of 142.73+rds.

∴ the equilateral triangle joining their centers is 142.73 + rds. on a side.

The area of an equilateral triangle 142.73 + rds. on a side is 55.116 + acres.

As this is an equilateral triangle each angle is 60°, or ⅙ of a circumference.

∴ Any one of those sections of the circles enclosed by the portion of the triangle it contains is ⅙ of the circle, or 16⅔ acres.

Then the three sections enclosed in the triangle contain 50 acres.

Then 55.116 + acres (area of the triangle) less 50 acres = 5.116 + acres, left for the ground enclosed by these tangent circles.

—GEO. E. CARROTHERS, Kentland, Ind.

CREDITS.

D. W. Gillespie, Burdick, 13, 14. 15. 17; J. C. Fritch, Decatur, 14, 15; Rufus Watts, Union, 13; James L. Allen, Henryville, 13, 14; E. B. Moore, Floyd's Knobs, 13, 14, 15; C. E. Crawford, Mulberry, 15; I. S. Morse, Crumstown, 13, 14, 15; J. Scheper, Oldenburg, 13, 14, 15; D. M. Myers, Woodburn, 17; B. F. Shaw, Grandview, 13, 15; C. O. Alton, Fritchton, 14; Henry F. Meier, Edwardsport, 14; Wiley Hamilton, Sandborn, 14; Geo. F. Metzer, Meltzer, 17; H. S. Burlingame, Sparta, 14, 15, 17; F. C. Walker, Leipsic, 14, 15; Clara Damon, Ft. Wayne, 14; Roy Jones, Talma, 14, 17; E. E. Landis, Camden, 15; C. V. Peterson, West Point, 14, 15; C. A. Wald, Valentine, 14, 15, 17; Ernest Applegate, Thorntown, 14, 15, 17; D. W. Lawrence, Ridgeville, 13, 14, 15; S. B. Cushing, Michigan City, 13; J. B. Schwartz, Collingswood, 13, 14; R. R. Wyatt, Spencerville, 14; Edna Owens, Winamac, 14; J. A. Brickley, Bluffton, 14, 15; Claus Brink, McCool, 14, 15; Geo. C. Carrothers, Kentland, 14, 15, 17.

CORRECTION.

We gladly give place to the following correction. Several readers noted the error:

The published solution of the 9th problem in the mathematical department of the INLAND EDUCATOR for May is incorrect. The error is the assumption that rectangles AC and EG are similar.

Let x and y be the No. of rds. respectively in the length and breadth of the unplowed land EG.

Then $xy=1600$.

And $x-y=40$.

Whence $x=64.72+$.

$\frac{80-64.72+}{2}=7.64$—rds. width of plowed strip.

—A. B. MAVITY, Jonesboro, Ind.

SOLUTIONS REQUESTED.

18. Solve No. 61, page 305.

19. Solve No. 32, page 302.

20. Solve No. 9, page 354.

21. Solve No. 11, page 355.

22. A field whose length is to its width as 2 to 3 contains 15 A. A man plows around it until he has plowed one-half of it. Find the dimensions of the unplowed part.

SHORT CUTS.—VII.

DIVISION.

23. To divide by 5, point off one place from the right and multiply by 2. e. g., $785\div5=78.5\times2=157$.

24. To divide by 25, point off two places from the right and multiply by 4. e. g., $8625\div25=86.25\times4=345.00$.

25. To divide by 125, point off three places from the right and multiply by 8. e. g., $7625\div125=7.625\times8=61$.

26. To divide by any aliquot part of 100, point off two places from the right and multiply by the number which produces the aliquot part. e. g., $874\div16\frac{2}{3}=8.74\times6=52.44$.

$963\div33\frac{1}{3}=9.63\times3=28.89$.

27. Contraction by writing the successive new dividends without writing the partial products. The following example will illustrate:

96435÷43.

Operation: 43 | 96435 | 2242

104

183

115

29 remainder.

By a little practice this method may be rapidly used and will prove a great time-saver.

SOME NEW BOOKS.

The Teaching of Elementary Mathematics.—This book comes from the Macmillan Company and is written by Dr. David Eugene Smith, principal of the state normal school at Brockport, New York. Dr. Smith, by training, experience, teaching ability, and wide acquaintance with the history of mathematics is specially fitted for writing such a book, and has performed his task well. The subject is treated under the three heads of Arithmetic, Algebra and Geometry. Each of the subjects is treated historically, pedagogically, and mathematically. The author has no pet method to exploit. Common sense and the keen logic of the mathematician are shown on every page. The book is so good that it is difficult to single out any particular chapter for special mention. Chapter VIII, Typical Parts of Algebra, is so unique however that I give it particular notice. In this chapter the subjects of Definitions, Signs of Aggregation, Quadratics, Equivalent Equations and Graphic Methods are treated in a way that will give the average teacher a power never before dreamed of. The book as a whole is so valuable that no progressive teacher of mathematics can afford to be without it.

(14). *How to Become Quick at Figures.*—The above book comes from Arthur Hinds & Co., New York. It is one of the best books on the subject of rapid methods that has appeared. The methods employed are the best known. The book contains a fund of valuable arithmet-

ical information. The collection of problems under the head of *Amusing Arithmetic* is unusually good. Every teacher will find the book suggestive and helpful. Its frequent use in the schoolroom would enliven and enrich the arithmetic work.

Speer's Advanced Arithmetic.—This book follows the general plan of the earlier books of the series. The subjects of measurement, comparison and ratio receive a great deal of attention. However much mathematicians may differ from Mr. Speer in fundamental theory, they must admit that he has worked out his view in a definite and interesting manner. The problems are interesting and thought-provoking. In the main, the problems of each list are individual, that is, the solution of the first does not furnish a key for the others of the list. The book will certainly be helpful to both teacher and pupil.

Cook's Synthetic Arithmetic.—This book comes from the press of Tracy, Gibbs and Co., Madison, Wisconsin. The book is not intended as a text-book for pupils but rather as a hand-book for teachers. It contains a large amount of material not usually found in text-books, but which may be used with great effectiveness by a wide-awake teacher. The treatment of short methods of multiplication and division is well worth the price of the book. All the subjects are treated from a modern standpoint, the current business terms and customs being employed. The chapters on the metric system and electro motive power are excellent. The book is worthy a place in the library of every teacher.

Graded Work in Arithmetic by S. W. Baird, principal of the Franklin grammar school, Wilkesbarre, Penna., is now completed through grammar grades. The first four books contain an abundance of fresh and well arranged material for the first four years of school. The many illustrations and the practical character of the exercises will certainly make the books both interesting and valuable. The fifth book for the grammar grades is an unusually good one. Mere rules and definitions do not receive much attention, but in their place is a large number of practical problems. The *statement plan* of solution deserves special commendation. The book closes with an excellent chapter on the principles of algebraic equations.

Mr. W. S. Hanna, absent on leave from the Mathematical Department of Indiana University, has decided to remain another year at the university of Pennsylvania. He holds the Harrison Fellowship in mathematics.

PICNIC TIME.

It's June agin, an' in my soul I feel the fillin' joy
That's sure to come this time o' year to every little boy;
For every June the Sunday-schools at picnic may be seen,
Where "fields beyont the swellin' floods stand dressed in livin' green;"
Where little girls are skeered to death with spiders, bugs and ants,
An' little boys get grass stains on their go-to meetin' pants.
It's June agin, an' with it all, what happiness is mine—
There's goin' to be a picnic an' I'm goin' to jine!

One year I jined the Baptists, an' goodness how it rained!
(But grandpa says that that's the way "Baptizo" is explained.)
An' once I jined the 'Piscopals and had a heap o' fun—
But the boss of all the picnics was the Presbyteriun!
They had so many puddin's, sallids, sandwidges and pies
That a fellow wisht his stummick was as hungry as his eyes!
Oh, yes, the eatin' Presbyteriuns give yer is so fine
That when they have a picnic, you bet I'm goin' to jine!

But at this time the Methodists have special claims on me,
For they're goin to give a picnic on the 21st, D. V.
Why should a liberal Universalist like me object
To share the joys of fellowship with every friendly sect?
However het'rodox their articles of faith elsewise may be,
Their doctrine of fried chick'n is a savin' grace to me!
So on the 21st of June, the weather bein' fine,
They're goin' to give a picnic, an' I'm goin' to jine!

—*Eugene Field.*

MUSIC.

EDITED BY

J. G. CRABBE, Ashland, Ky.

WHY SHOULD MUSIC BE TAUGHT IN OUR PUBLIC SCHOOLS?

Education, to be complete, must develop, symmetrically, the physical, mental, psychical and spiritual parts of our being. The neglect of either results in deformity, degeneration and devolution.

We often fail to realize how powerful the effects of the emotions are, and in how many ways they manifest themselves. They may be compared to the inner forces of a volcano which at times burst forth with terrific effects, or, the frightful tornado, dragging death and devastation in its path, and again to the life giving sunshine and fruitful showers filling the world with joy.

We all know that the young mind is incapable of giving undivided attention for as long a time as a mature mind. For this reason we resort to all imaginable means to interest our pupils. All the work undertaken to impress a weary mind ends in failure. It is to use a common expression, "like pouring water on a duck's back." Music will do the work of a stimulant.

At such a moment of somnolency lay aside all other work. Let in plenty of pure air. Give some few breathing exercises. Sing a few songs of joyous ideas, in good lively time. Then study the technical parts of the selection but do this only when the interest has been thoroughly revived. You will observe with delight, the pale little faces redden with living fire, the glow in their eyes rekindle, the whole electric machine of their being thrilling as their pulses throb with the oxygen laden blood. The flood gates of the mind have been thrown open, and the spring tide of thought flows in to enrich the barren fields. Then take up your work again and observe with how little friction your educational machine will run. You have placed the minds of your pupils in a receptive attitude for truth.—*Wm. G. Bek.*

THE EMOTIONAL SIDE IN MUSIC.

In many cases the methods are wrong, putting too much emphasis on the mechanical side, and dwarfing the natural faculties of the child. No system of music will succeed in the hands of an incompetent teacher. The ideal should always be present, and mechanical processes should be avoided as much as possible. The child is entitled to the best there is in music, and to this end the best examples should be used in the earliest drill exercises. The child is a creature rather of emotion than of reason, and music therefore makes a strong appeal to his highest faculties. Children get most of their information through the perceptive faculties, and therefore the practice of analysis should be avoided in teaching young children. Children should sing before they study, while they study, and by reason of their study. The child should learn to sing with spontaneity. As the process goes on it should be left more and more to its own resources. The songs should be made the language of the soul, and time should not be wasted on anything but the best of music. More attention should be paid to appealing to the higher faculties of the pupils, as is done in the teaching of literature. They should be taught not to be musicians, but the literature, the history and the geography of music. Many of the pupils of the high school are not even familiar with the terms of music. They take up a program and they are confronted with language that is strange to them, and in this way they listen to it without a correct understanding. Music should have a background of history and literature, which gives the child a perspective that will appeal strongly to its imagination in a way that nothing else can do. It will associate the great masters of music and their works with the literature and the history of the countries from which the music derived its inspiration.—*C. H. Congdon.*

DR. A. E. WINSHIP ON PUBLIC SCHOOL MUSIC.

But, all in all, music has, probably, been the best illustration of newness in methods of teaching an old subject. Indeed, it is largely a new subject. Although music is taught in many cities and towns there are more American children who are not taught music in school than there are who receive such teaching. The original method, that which was the pioneer East and West, was the *National System* of Ginn & Co. This was followed by the *Normal Music Course* of Silver, Burdett & Co. The former had a monopoly of the field until about sixteen years ago, then for fourteen years it shared the music
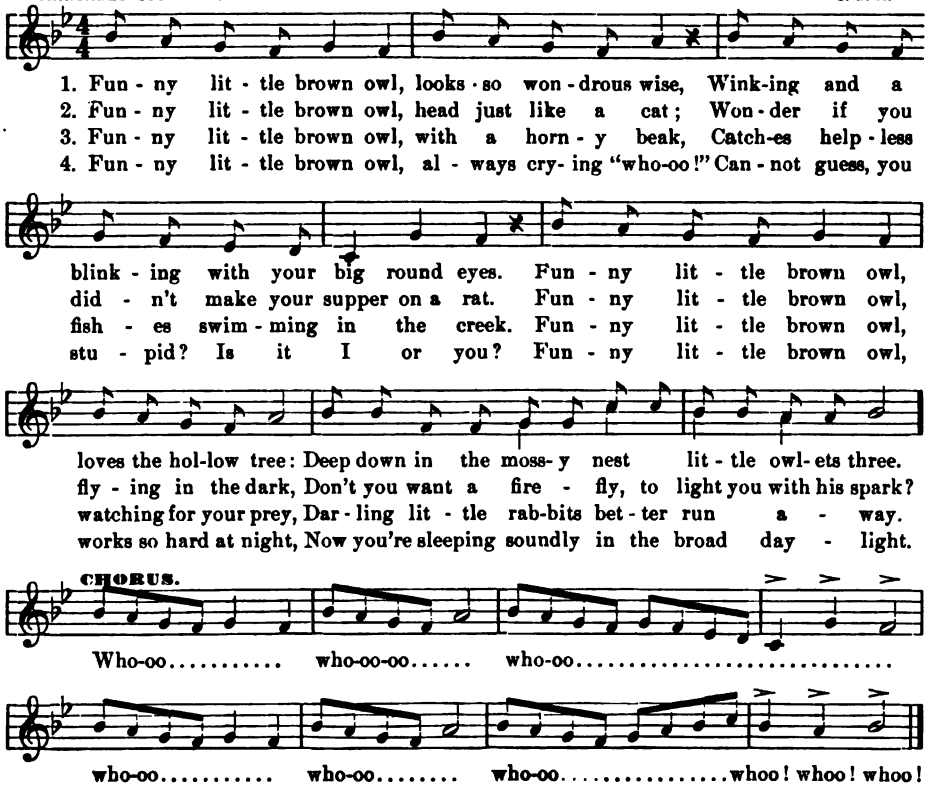
market with the *Normal Music Course*. Three years ago the *Natural Music Course* of the American Book Company came into the field, and now the *Modern Music Series* of Scott, Foresman & Co., Chicago, enters the arena. A study of the placing of emphasis by each of these music courses would be interesting in view of the above analysis. Each has a philosophy, each advocates a special spirit in song, and each has its own devices. The names have not been accidental. The one was national in its purpose, one was normal in its method, one natural in its spirit, and the last is thoroughly modern in its application of the philosophy of music, of the psychology of developing the art of singing, and of the pedagogy of teaching music.

As a whole, these systems of music have done much by way of influencing the teaching of other subjects. There is scarcely a public school music teacher or supervisor in the United States who is not devoted to one or other of these systems. It is not loyalty to a publishing house, for these men care nothing for other publications of the house, nor is it a craze over some device, but it is loyalty to the whole idea—philosophy, spirit, and method—which the national, normal, natural, or modern system represents. When a new course like the *Modern Music Series* presents itself, therefore, it does not attempt to win its way by pictures, as a geography or reading book does, but by some ideals, as the having of all the songs classic in poetry and melody, or the method of drill from sections of the melody rather than from the scale.

There is no other subject whose discussions are upon so high a plane as these, none which appeal to so high a range of intelligence. The old-time discussions of Mr. Mason and Mr. Holt were enlightening all along the line. They did much to extend the study of singing in school, and one hazards nothing in saying that the present teachings of Messrs. Ripley and Foresman will extend the field of public school music fifty per cent. It would be well worth the while of any teacher, whatever the subjects she teaches, to study the philosophy and spirit of a great music series.

FUNNY LITTLE BROWN OWL.

MARGARET COOTE BROWN. C. B. A.



MEMORIZING AND UNDERSTANDING.

By SAMUEL FINDLEY, PH. D.

SHOULD children ever memorize what they do not understand? is a question in which both teachers and parents are interested. The doctrine and practice of former times answered the question with a very decided affirmative.

Within the memory of men now living, the work of the school as well as the home training consisted largely in memorizing or "learning by heart" what was dimly or not at all understood. The writer remembers very vividly his first lessons in Latin, which consisted solely of the memorizing of words as meaningless to him as Choctaw. The first lesson was, *hic, haec, hoc, hujus, hujus, hujus, huic, huic, huic, hunc, hanc, hoc*, etc. This and the other paradigms were repeated *ad nauseam*, with the accompaniment of sighs and tears, and recited to a college professor for weeks before even two words were put together to express meaning. About the same time, the definitions, rules, "systematic order of parsing," etc., of Kirkham's *English Grammar* were "learned by heart" and recited, and these were about as devoid of meaning as the Latin paradigms. In arithmetic "sums" were worked by rule, without explanation and in great measure without thought. Prior to all this, and mainly before he could read, he had memorized by ear, psalms and other whole chapters of the Bible, together with that wonderful system of theology known as the Westminster Assembly's Shorter Catechism, which begins, "What is the Chief End of Man?" These were repeated again and again through the years of youth, until they became as familiar as the multiplication table. And I may say in passing that I now count these early lessons among my most valuable possessions. Bless the memory of a good mother and elder sisters who taught me them.

All this and much more was acquired by dint of pure word memorizing. But when the process of mental digestion did begin there was a pretty good supply of material to work upon.

Such was once the all but universal practice. The alphabet and the multiplication table, and everything else for that matter, were learned by rote—purely a memoriter process. I knew students in college to commit to memory verbatim geometrical demonstrations and recite them in the class-room. There was little attempt at the cultivation of observation and less of reflection and understanding. Religious instruction in the home was conducted in the same way. It consisted almost exclusively of the verbal memorizing of scripture passages and catechisms. If any ideas were lodged or any thought started in the mind, it was incidental and not the result of purpose or plan in the teaching. Indeed, the most absurd ideas often resulted.

But a reaction came, and the opposite extreme has been reached in some cases, as witness the following quotations from recent writers:

"The memory should never anticipate the intelligence."

"The pupil should commit nothing to his memory which has not first passed through his understanding."

"No facts should be acquired by children unless the principles underlying them are first made clear. No words should be committed to their memories, or ever employed in their hearing, unless previously explained and thoroughly understood."

The absurdity of this last quotation is very apparent. To state it is to refute it. From earliest infancy words continually and unavoidably fall upon a child's ears as mere unmeaning sounds, which afterwards come to have meaning. In this way more than any other does a child acquire the use of language. It is true that the process of associating words with things goes on at the same time, and should do so perhaps more than it does; but it is as absurd to say that a child should never hear or utter words until they are thoroughly understood as to say that a child should never see a horse until it knows all about a horse. As Chancellor Payne puts it, "To say that we should memorize only what we understand is very much like saying that we should commit nothing to the stomach until it has been digested. We eat to the end that we may digest; and we must confide material to the retentive power of the mind in order that the intelligence may have something to work upon." It may be remarked here that there is a process of mastication which precedes the committing of food to the stomach, and perhaps there is a corresponding mental process which should precede the committing of mental aliment to the memory.

The whole truth in relation to this subject is not easily stated in few words. It does not all lie at either extreme, nor yet at any one point between, but rather all the way along from one extreme to the other. Probably not a human mind exists that does not retain in memory much that it does not fully understand. All

through life we commit to the memory facts and principles which, to say the least, are very imperfectly understood. As the pen traces these lines a street car is passing rapidly without any visible propelling power. I have learned the fact that it is propelled by electricity, and my memory holds that fact very securely; but there is very little about it that I understand. Faith accepts and memory retains truths of the highest importance which the highest human intelligence cannot understand. Trust and obedience to authority, without full understanding, are of the essence of that child-like spirit so highly commended by the Great Teacher. There is no time in life when there are not a good many things to be received purely upon authority.

In the early years of life memory, spontaneous and verbal memory, is at its best. It is at this period that Dr. Bain advises "that principles, maxims, theorems, formulas, definitions, which need to obtain a firm place in the memory, be given a little in advance of their being fully understood," and that Noah Porter recommends the learning of "stories, verses, poems, facts, and dates, as freely and as accurately as the child's mind can be made to respond to such tasks." A little later all these acquisitions should be secured against loss by recasting in the mold of reflection and understanding.

These early years are the mother's great opportunity. That mother misses her opportunity and fails in one of her highest duties who neglects to store the memory of her child with words of wisdom which may become the very warp and woof of character. Mothers cannot be too deeply impressed with the importance of storing the memory of their children with that which will afford nourishment and strength in after years.

It is at this point that much of the modern Sunday school teaching comes short. Most of the time now spent in talk and story-telling might be used with far greater profit in thoroughly fixing in the memory the pure words of the sacred scriptures.

It must not be inferred that there should be no exercise of the understanding in the early years. There are many things, in school and out, adapted to the childish understanding. The young mind's desire to know "the reason why" may often, but not always, be wisely gratified. The intelligence should be awakened. The constant endeavor of parents as well as teachers should be to lead the children to get the sense and to form the habit of looking for meaning. But when the most skilful have done their utmost in this direction, there will still be time and place for laying by in store much material for future elaboration and use.

Nothing here said should be construed in opposition to the proper training of the child's observing powers and the cultivation of the intelligent use of language by objective teaching. This ought we to do and not to leave the other undone.

AKRON, OHIO.

THE BLUE LAWS OF CONNECTICUT.

Not long ago there came into my possession, for a few days, an old history of Shrewsbury, Massachusetts. In this book is a reprint of some of the old blue laws of Connecticut. Nothing is said in doubt of their genuineness but the Encyclopedia Britanica says:

"The code commonly called the *Blue Laws of Connecticut*, is now generally considered to have been a forgery by the Rev. Samuel Peters. The early statutes were not peculiarly severe or intolerant and no case of execution for witchcraft is known."

However this may be the laws are interesting and amusing and no doubt reflect some of the spirit of the age in which they were written.

Mr. Fiske, who weighs evidence carefully before he affirms an historical fact says: "The story of the Blue Laws was first published in 1781 by the Rev. Samuel Peters a Tory refugee in London, who took delight in horrifying our British cousins with tales of wholesale tarring and feathering done by the patriots of the Revolution. In point of strict veracity Dr. Peters reminds one of Baron Munchausen; he declares that the river at Bellows Falls flows so fast as to float iron crow-bars, and he gravely describes sundry animals who were evidently cousins to the Jabberwok."

The following choice samples of this most extraordinary production are taken from "Peter's and Barrow's Compilation republished at Hartford in 1838:"

No one shall hold any office who is not sound in the faith; and whoever gives a vote to such person shall pay a fine of 1£.

No one shall run on the Sabbath day, or walk in his garden or elsewhere, except reverently to and from meeting.

No one shall travel, cook victuals, make beds, sweep house, cut hair, or shave on the Sabbath day.

The Sabbath shall begin at sunset on Saturday.

No woman shall kiss her child, wife her husband, or husband his wife on the Sabbath or fasting-day.

No minister shall keep a school.

A debtor in prison, swearing he has no estate, shall be let out and *sold* to make satisfaction.

No one shall read common prayer, keep Christmas or Saint's day, make mince pies, dance, play cards or play on any instrument of music except the drum, trumpet and Jews harp.

No gospel minister shall join people in marriage. The magistrates only shall join in marriage, as they can do so with less scandal to the Christian church.

Married persons must live together or be imprisoned. [Were there divorce cases in those days?]

Every male shall have his hair cut round according to a cap.

All capital causes concerning life or banishment, if there be no express laws, shall be judged according to the word and law of God by the General Court.

The last on my list is, no doubt, the work of a wag but whether the Reverend Peter or not is left to our discretionary powers.

Beer is forbidden to be made on Saturday because it will *work* on Sunday.

For the further information of any to whom this matter is of interest we would add that these laws are an exact copy of the reprint in "History of the town of Shrewsbury, Mass., from its settlement in 1717 to 1829, etc.

By Andrew H. Ward, member of New England Historic and Genealogical Society, Boston.

Published by Samuel G. Drake, 56 Cornhill.

J. Howe, printer, 39 Merchant Row. 1847."

By the way, the book contains some very entertaining items of old Colonial days in a New England town, which are quite worth reprinting in some future number of THE INLAND EDUCATOR.

The book is hardly one to be recommended for general reading, as it is decidedly dry as a whole and of keen interest only to those whose forefathers have lived and loved and fought and died in the little Massachusetts village long before the Western fever became epidemic.

If Mr. Fiske speak truly, as he doubtless does, the Blue Laws of Connecticut have no historical value as statements of facts but they are none the less a side-light on our early Colonial history, and taken for what they are worth may lead to a foundation of truth.

BERTA KNOWLTON BROWN.

THE PROGRESSIVE MYTH.

The myth in order to make the pupil think should increase in power from the simple memory myth in which the facts or incidents are told as simple, easily discerned truths, to the more intricate one in which the underlying truth lies deeply imbedded in what seems to be a most absurd and grotesque story.

As an example of the first class may be mentioned that universally known and loved story of early childhood, "The Old Woman and Pig," where mere repetition emphasizes the story. Others of this class are, "Three Little Pigs," "The House That Jack Built," "Goldie Locks and the Three Bears."

Advancing towards the second class are "The Conceited Apple Branch," "Snow White," while a step farther along the line come "Cinderella" and "The Ugly Duckling" until we come to "The Sleeping Beauty" and "The Frog Prince."

The latter named is a good example of the second class of myths mentioned, in which the very absurdity of the dress causes the mind to be attracted towards it, and leads the pupil to think there is something beyond this grotesqueness. When this conclusion is reached the mind is restless until that something has been found, for curiosity has been aroused and must be satisfied until the pupil unearths from the enveloping mass the great thought, "Promises must be faithfully kept."

Underlying all the delight and charm of the story in "The Sleeping Beauty" is the thought that "Love (in its fullest meaning) alone wins," that love which "beareth all things, believeth all things, hopeth all things, endureth all things." Such love had the true prince, surmounting all difficulties, whereas all predecessors had failed, lacking love.

EDITH MACLEAN JEPHSON.

A DISCUSSION OF RICHARD REALF'S "INDIRECTION."

The poem is an exemplification of the highest phase of philosophical thought, that all things are manifestations of an eternal, all-pervading principle. Philosophers have slowly and laboriously worked their way from the conception of objects as the real through the conception that they are manifestations of forces that are the real to the conception that they but reveal the universal Ego, that all things are divine.

A poet may be a philosopher, indeed his keener insight peculiarly fits him to be one, but when he becomes such he does not cease to be a poet,

and his thoughts of necessity take on a poetic form. Hence a student of Tennyson studies his philosophy as revealed in his poetry, and a study of Tennyson that does not consider his philosophy is manifestly incomplete.

There are those who claim that a poem is primarily designed to please; such a poem as "Indirection" has stopped far short of what it might do when it has ministered to the æsthetic. The reader who takes the poem and leaves the philosophy chooses the hull and leaves the kernel. When we read the poem it scarcely seems that we have been with a poet so far have we left the melody behind in pursuing the thought, but rather with a philosopher who has poetized. He indeed pleases with his poetic fancies and suggestive figures, yet these are but the means of catching the ear for his philosophy. So we would like to reverse this often accepted notion of poetry and make the present writer a philosopher first and a poet afterwards; or, if it be more pleasing, a philosopher cast in the poetic mould.

The purpose of an author must decide the means to be used; and since the purpose is primarily to teach and to please that it may teach, the means must attract us and at the same time hold our attention till the lesson can be imparted. "Fair are the flowers and the children, but their subtle suggestion is fairer." A better means could not have been used for arousing our interest, for what more universally appeals to us than the beauty of flowers and the possibilities of children? *Flowers* alone would not have been sufficient, for all cannot catch their subtle suggestion, cannot see the soul that mounts upward in the flowers, as Lowell puts it. Neither would *children* have been sufficient, as the poet wants to call attention to the spirit behind the flowers, and not the flowers only but to all the varied forms about us.

The thought of the entire poem is in that one verse, yet it must be elucidated and emphasized. The end is to be reached through the emotions, so illustrations must be repeated till the reader's mind catches the swing of the poet's and can be brought to a fuller realization of the thought. The flowers must be intensified in the rose and the daisy, the human interest in the children be expanded into a Shakespeare and a prophet. The reader must contemplate the canvas till it means more than light and shade, till he can see the painter in the picture no matter what the subject may be; he must contemplate the statue till its child becomes fervid with the soul of the sculptor. Further, he must look away into the infinite depths of space, people it with worlds, calculate their distances and sizes, and, if he will, speculate upon their destiny and purpose. Now let him contemplate the being that can measure worlds and calculate their density millions of miles away, that can sweep in thought from an eternity past to an eternity future, and feel the glowing exultation that comes from the mastery. If his words do not testify that "space is as nothing to spirit" surely his inner soul must.

When man enters upon the mystery and majesty of his own being he has entered upon the seemingly unfathomable in which but few soundings can be made. Does there ever come a time when he can dismiss the questions put by his childish meditations and wonderings? Where did I come from? What am I here for? What becomes of me when I die? If I go to heaven, where is it, and when do I go? These are indeed mysteries but there is a greater—how rational man can ponder them and not postulate an intelligent creator for such a creation.

Every illustration has back of it something greater than it is, there can be but one conclusion—back of all created stands a greater creator.

While in most things the poet is a law unto himself, he cannot extend his license to leaving the reader entirely out of consideration. If he would have him appreciate the height of the Alps, he must arm him with alpenstock and have him make the ascent. The reader must be remembered in the arrangement if the effect desired is to be accomplished. In the present poem the order is from the simple, familiar objects about us to the whole vast creation. Upon slight reflection, any one will admit that there are grander possibilities in the child than his feeble helplessness would suggest, that no poem could enfold all its meaning in the words, that the painter has diviner visions of beauty than take shape on his canvas, that under every joy felt lies the fountain of feeling. These being true individually are true collectively and one can say with the poet:—

"Great are the symbols of being, but that which is symboled is greater;
Vast the creation beheld, but vaster the inward creator."

He can see that "the essence of life" is divine, that all things have their being in and are upheld by Omnipotence and are directed by Omniscience.

The poem is a unit in that each verse is but a reiteration of the meaning of the first, practically it might be called a song in many keys. And sung in many keys that each might find in it

music for himself, and prolonged that he might catch the gentler, sweeter strains.

The illustrations are peculiarly fitted to the purpose of showing the spirit in the thing. Without exception they appeal to our sense of the beautiful and carry us on wings of thought away from the sordid things of life into the realm of spirit, not to contemplate spirit in its essence but in its manifestations.

The poet sings the song, the reader builds the melody into fact and turns the philosophy into life. Who is the rightful owner?

LIZZIE LITSEY.

INDIRECTION.

Fair are the flowers and the children, but their subtle suggestion is fairer,
Rare is the rose-burst of dawn, but the secret that clasps it is rarer;
Sweet the exultance of song, but the strain that precedes it is sweeter,
And never a poem was writ, but the meaning outmastered the meter.

Never a daisy that grows, but a mystery guideth the growing,
Never a river that flows, but a majesty scepters the flowing;
Never a Shakespeare that soared, but a stronger than he did enfold him,
Nor ever a prophet foretell, but a mightier seer had foretold him.

Back of the canvas that throbs, the painter is hinted and hidden,
Into the statue that breathes, the soul of the sculptor is bidden;
Under the joys that are felt, lie the infinite issues of feeling,
Crowning the glory revealed, is the glory that crowns the revealing.

Great are the symbols of being, but that which is symboled is greater,
Vast the creation beheld, but vaster the inward creator;
Back of the sound broods the silence, back of the gift stands the giving,
Back of the hand that receives, thrill the sensitive nerves of receiving.

Space is as nothing to spirit, the deed is outdone by the doing;
The heart of the wooer is warm, but warmer the heart of the wooing,
And up from the pits where these shiver, and up from the heights where those shine,
Twin voices and shadows swim starward, and the essence of life is divine.—*Richard Realf.*

A SUCCESSFUL ART EXHIBIT.

The teachers of Terre Haute, and a large number of citizens, were unanimous in thinking the six-day art exhibit conducted under the auspices of the public schools of the city, and directed chiefly by Miss Rose Griffith, supervisor of drawing, a great success. The exhibit included a large amount of work done by the pupils in the city schools, a considerable display of manufactured ware and fabric from the stores and factories of the city, and an elaborate collection of paintings by artists of note now living. This gave the display a three-fold interest and value. It brought the parents and patrons of the school into closer relation with the work of the children and into a better appreciation of it, while at the same time it encouraged the pupils themselves in that work; next, the exhibition of various articles of decorative and artistic character was an object lesson in the significance and purpose of cultivating the artistic sense; and finally the collection of fine pictures in water and in oil was a joy to the appreciative and an education to all. A neat and comprehensive catalogue gave the desired information to such as wished to know about the work of the various artists. A ten-cent admission fee solved the problem of the considerable expense that was a necessary adjunct. The townspeople patronized the exhibit generously, and felt well repaid. But the great purpose was the educative one. The total impression made upon the 6,000 pupils of the city who saw the display can hardly be estimated. It is only in the consciousness that the artistic sense was given a large impulse that the great effort of Miss Griffith, Superintendent Wiley, Professor Lepper and others will find its reward. But, as Mr. Wiley remarked, every educative process requires an outlay. Those who worked so hard will feel it a good investment when they commence to see the young generation asking "What is artistic, and how shall we learn to know and appreciate and encourage what is truly beautiful?"

By request, Miss Griffith has expressed her view of the purpose and scope of the work she is trying to do in the Terre Haute schools.

"By practical, we usually mean the technical value of a subject; that phase which renders it easier for a boy or girl to make a living after leaving school; that which forms a basis for his future manual, business or professional life. This phase of the work is important and will be included in the discussion.

"The whole purpose of our drawing work in the public schools is broader than this. It is

not only for its practical value we have it. The purpose is three-fold: First, it gives the child a basis for the mechanical and fine arts. Second, it gives him a new language, a new means of expressing his thoughts. It is of pictorial value. Third, it develops the taste of the child; it enables him to enjoy the highest and best that art affords. It has a cultural value. Let me repeat. We teach it for its technical value, for its pictorial value, and for its cultural value.

"So many have stated to me that our purpose in teaching drawing is to make artists. We do not teach it to make artists, but to develop the artistic instinct. We hope to encourage any latent talent that may appear among our children; but it is as great a purpose to train the children of a city, who, by their appreciation may encourage the great creative natures among us.

You know seed cannot grow on barren ground. We must create an artistic environment first, before we can hope for great artists. "All people cannot become great, but in each child is the power to understand, enjoy and appreciate the beauties of the art of the past and of the present—the beauties of nature that, studied, have enriched the soul.

"Every normal child can be taught to draw correctly, however, and can be given a basis for many kinds of work that require the pictorial expression or deft fingers; and a child can be taught correct expression of thought by means of form.

"The teaching of art is no new thing, but the purpose for which it is used in the United States is new. The attempt to educate an entire nation in art is an heroic task and a unique one.

"In Europe the purpose of the public school seems to be the making of soldiers, gentlemen, craftsmen or scholars. America claims broader basic principles for her schools. Old world schools have in their purpose a specializing element. The work given is such as fits a child for certain lines of work. Our schools claim as their basis that broad culture that is a foundation for any and all kinds of work taken up when school days are finished.

"But what does general culture mean? It means the training which makes self-controlled, self-reliant, honest, industrious, law-abiding, beauty-loving, God-fearing beings. How are these qualities to be attained?

"Our old-time schools were devoted to a general storing up of facts. But what of the use to be made of these facts? The uselessness of facts without power dawned upon our educators, and the last two decades have seen a severe intellectual training that is indeed good; but even mental discipline is not enough.

"To be fully developed, to be a good citizen a child must have a strong body, a keen intellect, a fine ethical nature. He must be keen of ear, eye and touch; must have that acute development of the delicate, growing muscles of the hands so often needed in the every-day task of bread winning.

"Arithmetic, reading, spelling, geography, history, literature and sciences offer excellent means for the mental growth that a child may need to give him a taste for such pursuits as are based on these subjects; namely, professional and commercial pursuits. Music added to our course benefits both the physical and the ethical natures. Physical culture as now used gives systematic and general training to the muscles. These two subjects added to our course have worked wonders indeed.

"But where, among all our subjects are we to find the one which is to make our future machinists, draughtsmen, stenographers, engravers, jewelers, surgeons, needle-women, decoraters, artists?

"The invention of machinery is making farm work of such a nature that only a very few men are needed to produce the food that used to require so many hands. This, of necessity, drives our people to the city. Even if our cities are the centers of life no more food can be consumed than usual, and food prices are not likely to become greater. The farmer boy must turn to something else. As the world grows richer it requires more of the mechanical and fine arts even if it cannot eat more. There can be no end to useful, beautiful or luxurious articles as long as man has power to produce and money to buy.

"It will be in the mechanical and fine arts that the majority of our future men will be employed. If this is true some subject is needed that gives keen sight, close observation and delicate touch; that makes a child's hand responsive to his will; that trains the finer muscles while there is yet time. Let the muscles lie dormant in youth, give nothing to the child that makes him master of his fingers, and he must be clumsy all his life. All skillful musicians began early, so it must be in all muscular training.

"Self-mastery is the keynote to a strong life—a self-mastery which realizes that the body, mind and soul all respond to the strong will that determines to make living complete and beautiful. "Writing is a subject that aids in muscular development. Our grandmothers were taught to sew. This was one step in the right direction.

But in drawing we find the subject that in its numerous phases, its manifold uses, aids most in supplying this need.

"As drawing is three-fold in its purpose it is also three-fold in its nature. As constructive, it becomes the foundation for all kinds of pattern making, and, taught correctly, lays a foundation for draughting, architecture, pattern making, tailoring, toy making, and the jeweler's art.

"As representative, or pictorial, it lays the foundation for all illustrative work. All works on science such as botany, anatomy, geography and zoology are useless without pictures to help express the thought. History and literature depend upon drawing to make the subjects more lucid. Frye's famous geography is a picture book and John Fiske's school history of the United States has 250 illustrations. In representation all the subtle beauties of form, and color are learned. The child learns a new language in which to express himself.

"If he becomes an architect we shall see his expression in our buildings; if a mechanic, in the mechanism of wonderful machines, bridges, ships and engines. If the child is artistic he will give back to us his training in pictures that portray the beauties of land and sea and sky, or he will paint such pictures as will tell us tales of strength, power, truth, joy, tenderness or love.

"In decoration or designing the child is preparing for all that wonderful art of beautifying articles of every-day use. Not a piece of cloth, not a carpet, a vase, a wall paper, a book cover, an invitation card, or piece of furniture but must have its decoration. It is this field that we enter in the study of plaids, of paper cutting, and pasting; in all study of space relations and color harmonies.

"Please remember that we endeavor first to give the child a fuller, freer richer life; second, good taste as his heritage; andlast, if possible, the power to create; for creativeness is that wonderful gift of man which lifts him out of the realm of the animal and makes life divine.

"Give the child art. Let him have the training which will help him to grasp nature's whole beauty, which will make him dissatisfied with all that is ugly, or low; let him learn God's message to him in art and nature; teach him what to enjoy and how to enjoy; train him until purity and truth and beauty are as necessary to his being as his daily bread."

"The wisest of the wise listen to pretty lies,
And love to hear them told;
No doubt Solomon listened to many a one—
Some in his youth and more when he grew old."

PROHIBITION CANDIDATE FOR SUPERINTENDENT OF PUBLIC INSTRUCTION.

THE INLAND EDUCATOR is pleased to print the following sketch of Professor Ayers which appeared in the *Patriot Phalanx:*

Burt Wilmot Ayres, B. S., A. M., nominee for superintendent of public instruction, was born in Hartford City, Ind., December 29, 1865. After graduating from the Hartford City high school in 1884, he attended DePauw university three years, afterward finishing his college course at Taylor university, Upland, receiving the degree of B. S. He then pursued a post-graduate course in this institution, receiving in 1899 the degree of Master of Arts.

As a teacher he began in the district school, gradually rising to the graded school, high school and superintendency, and finally to a college professorship. He has been superintendent of the public schools of Redkey, Montpelier and Warren, Ind. He is now dean of the normal department and professor of psychology and pedagogy in Taylor university. He has been very successful in his present position, to which he was called in 1897. Professor Ayres is highly esteemed by his students.

Almost as soon as he became a voter he allied himself with the prohibition movement, and for a number of years it has been his absorbing theme. He might well be called the agitator of Upland. He is a living protest against the licensed saloon, and has been an important factor in making Taylor university strong in prohibition sentiment and votes.

Professor Ayres is an active church and Sunday school worker, being superintendent of the M. E. Sunday school. His wife is prominent in W. C. T. U. work, being state superintendent of temperance literature.

Professor Ayres' varied experience in school work, together with his high educational qualifications, makes him a strong candidate.

HO FOR CHARLESTON, N. E. A.

The National Educational Association meets in Charleston, S. C., July 10-13, 1900. The route selected by the Indiana delegation going is the Queen and Crescent, and Southern railways. Starting from Cincinnati and Louisville and going via Asheville or Chattanooga, Atlanta and Augusta. The points of meeting for the Indiana delegation will be Cincinnati and Louisville. Special trains will leave the above points at 8 A. M., uniting at Lexington on Friday, July 6th, 1900. Stops will be made at interesting

points along the way and delegation will arrive in Charleston Monday morning, July 9th. This will enable visitors either to attend the meetings of the Educational Council or to see the sights of the city and vicinity before the opening of the general session.

The rate for the round trip is one full fare plus two dollars. Persons may go one route and return any one of seven other routes for the rate above. Return via Washington, D. C. for slight additional sum.

The rate from Cincinnati is $21.85, Louisville $21.00, Evansville $21.60, Indianapolis $23.80, Terre Haute $24.90.

Indiana should have a large delegation. Complete information will be cheerfully given upon application to any of the undersigned:—

J. W. Carr, Director for Indiana, Anderson.
F. L. Jones, Indianapolis.
D. M. Geeting, Indiana School Journal, Indianapolis.
Charles F. Patterson, INLAND EDUCATOR, Edinburg.

THE CHARLESTON PROGRAM.

Arrangements for the 1900 meeting of the N. E. A. are about perfected. The programs of the many sections can not be given here for lack of room, but that of the general sessions is presented in full.

TUESDAY AFTERNOON, JULY 10—OPENING SESSION.

Prayer. *Music.*

Addresses of Welcome.

HIS EXCELLENCY MILES B. MCSWEENEY, Governor of South Carolina, on behalf of the state.

HON. JOHN J. MCMAHAN, state superintendent of public instruction, on behalf of the educational interests of the state.

HON. J. ADGER SMYTH, Mayor of Charleston on behalf of the municipality.

HENRY P. ARCHER, superintendent of Charleston schools, on behalf of the educational interests of the city.

Responses.

DR. WM. T. HARRIS, Commissioner of Education of the United States, Washington, D. C.

DR. E. ORAM LYTE, principal of first Pennsylvania state normal school, Millersville, Pa.

J. W. CARR, superintendent of city schools, Anderson, Ind.

J. A. FOSHAY, superintendent of city schools, Los Angeles, Cal.

Music.

President's Address—(30 minutes)—President O. T. Corson, Columbus, O.

TUESDAY EVENING, JULY 10.

Music.

The Small College.

I. Its Work in the Past—President W. O. Thompson, Ohio state university, Columbus, O.

II. Its Prospects—President W. R. Harper, university of Chicago, Chicago, Ill.

WEDNESDAY MORNING, JULY 11.

Prayer. *Music.*

Contributions of Religious Organizations to the Cause of Education.

I. By the Baptist Church—President Oscar H. Cooper, Baylor University, Waco, Texas.

II. By the Methodist Church—Rev. H. M. Du Bose, D. D., general secretary of the Epworth League, M. E. Church, South, Nashville, Tenn.

III. By the Catholic Church—Dr. Conde B. Pallen, St. Louis, Mo.

WEDNESDAY EVENING, JULY 11.

Music.

Addresses.

I. (Subject to be supplied)—Booker T. Washington, president of Normal and Industrial institute, Tuskegee, Ala.

II. (Subject to be supplied)—President Joseph Swain, university of Indiana, Bloomington, Ind.

THURSDAY MORNING, JULY 12.

Prayer. *Music.*

The Problem of the Grades.

I. The Problem of Discipline—Miss Gertrude Edmund, principal of Teachers' Training school, Lowell, Mass.

II. The Problem of Classification and Promotion—Miss Elizabeth Buchanan, Kansas City, Mo.

III. The Problem of Instruction—Mrs. Alice Woodworth Cooley, supervisor of primary grades, Minneapolis, Minn.

THURSDAY EVENING, JULY 12.

It is expected that the program for this evening will include addresses by President McKinley and others, if the President finds it possible and consistent with the duties of his office to be present.

FRIDAY MORNING, JULY 13.

Prayer. *Music.*

Some Relations of Literature to Education.

I. The Influence of Poetry on Education from the Basis of Aesthetics—President WM. M. BEARDSHEAR, state college of Agriculture and Mechanic Arts, Ames, Ia.

II. The Value of English Literature in Ethical Training—By Principal REUBEN POST HALLECK, Boys' high school, Louisville, Ky.

III. Educational Values in Literature—By DR. MARTIN G. BRUMBAUGH, professor of pedagogy, university of Pennsylvania, Philadelphia, Pa.

FRIDAY EVENING, JULY 13.

Music.

Addresses.

I. What Manner of Child shall this be?—By Hon. G. R. GLENN, state superintendent of public instruction, Atlanta, Ga.

II. (Subject to be supplied)—GEO. B. COOK, superintendent of city schools, Hot Springs, Ark.

Music.

Introduction of President-Elect.

Music—AMERICA, by the Audience.

Benediction. *Adjournment.*

INDIANA COMMENCEMENTS.

Many commencement invitations have come, beautiful and artistic, as they should be, and all suggestive of high hopes and laudable ambitions. THE EDUCATOR extends thanks to the friends who have been so thoughtful as to send announcements, and to all the graduates best wishes and congratulations. Redkey reports seven graduates, W. D. Chambers superintendent; Martinsville twenty-two, W. D. Kerlin superintendent; Montpelier four, L. E. Kelley superintendent; Rockport thirteen, F. S. Morgenthaler superintendent; Corydon seven, Jesse W. Riddle superintendent; Williamsport two, S. C. Hanson superintendent; Cilnton ten, H. S. Schell, superintendent; Shelbyville nine, J. H. Tomlin superintendent. Noble County, E. L. Adair county superintendent, exercises at Albion, sixty-four graduates; Hebron four, G. A. Lovett superintendent; Monticello seventeen, J. W. Hamilton superintendent; New Albany thirty-eight, W. H. Hershman superintendent; LaGrange twenty-eight, F. M. Merica superintendent; Attica fifteen, W. A. Millis superintendent; Washington twenty-seven, W. F. Axtell superintendent; Garrett twelve, Ezra E. Lollar superintendent; South Whitley ten, O. H. Bowman superintendent; Greenwood fourteen, Edwin N. Canine superintendent; Ligonier twelve, W. C. Palmer superintendent; Brookville fourteen, Noble Harter superintendent; Bedford ten, W. E. Alexander superintendent; Portland twenty-two, E. F. Dyer superintendent; Marion (class roll not sent), B. F. Moore superintendent.

TREASURER'S REPORT OF THE SOUTHERN INDIANA TEACHERS' ASSOCIATION.

RECEIPTS.

Amount on hand April 20, 1899	$133.39	
2,575 membership fees at 25 cents each	643.75	
St. George Hotel donation	75.00	
Total receipts		$852.14

EXPENDITURES.

Voucher.

No. 1. W. H. Hershman, Executive Committee expenses	$ 5.90
No. 2. Samuel Wertz, Executive Committee expenses	2.75
No. 3. A. L. Gary, Executive Committee expenses	3.15
No. 4. A. O. Neal, Executive Committee expenses	2.70
No. 5. Evansville Journal Co., letter heads	1.00
No. 6. J. M. Kollmyer, printing, envelopes, etc	10.00
No. 7. Strohm, Fisher & Co., envelopes, twine, etc	4.88
No. 8. Keller Printing Co., tickets, membership blanks	16.25
No. 9. Evansville Journal Co., letter heads	4.50
No. 10. Crescent Engraving & Printing Co., invitations	7.00
No. 11. E. M. Bush Hardware Co., picture hooks	3.30
No. 12. Postal Telegraph & Cable Co., telegrams	.28
No. 13. Western Union Telegraph Co., telegrams	1.16
No. 14. G. W. Warren Co., drayage on piano	3.00
No. 15. Lillian M. Butler, pins, tape, etc.	.25
No. 16. M. Z. Tinker, music	2.05
No. 17. John Dewey, lectures and expenses	126.25
No. 18. Sarah L. Arnold, lectures and expenses	121.60
No. 19. Jas. D. Parvin, stamps, registration, etc	11.92
No. 20. W. H. Mushlitz, postage	5.22

No. 21. Levi Hooker, postage . .	2.25	
No. 22. King Cobbs, Opera House rent	55.00	
No. 23. J. S. McCorkle, Evans' Hall rent	30.00	
No. 24. Harding & Miller, piano rent	3.00	
Eo. 25. J. W. Blackman, trustee, M. E. Church rent	5.00	
No. 26. Draft on Chicago and New York	.59	
No. 27. J. W. Carr, donation for N. E. A. headquarters.	25.00	
Total Expenditures		$454.00
Cash on hand April 20, 1900 .		$398.14

Respectfully submitted,
W. D. KERLIN, Treasurer.

MARTINSVILLE, IND., April 20, 1900.

AMONG THE NEW BOOKS.

Home Geography, the first book of "Tarr and McMurry's Geographies," is announced as "the first of three volumes; the second deals with North America; the third with Europe and the other continents." The union of two such familiar names on the same title-page awakens expectancy and interest in the result of their united effort. The prominence of each of these gentlemen in their respective fields, the one in Geography, the other in Methods and Pedagogy naturally suggests the production of a text-book which in subject matter, arrangement and plan of presentation should be a model. The evidence that this has been attempted is abundant. The individuality of neither author is lost; perhaps it is too well preserved. The books are intended for grades below the high school and the first book is the beginner's book. The scope of the work and the plan of presentation are in the main well adapted to the class of pupils for whom the book is written. Many will probably wonder, however, on what pedagogical principle the subject of latitude and longitude has been omitted and the causes of mountains, continents and ocean basins included, though the latter subjects are well presented. The *omission* of the subject of latitude and longitude in a simple way might have avoided the violation of another pedagogical principle; viz., that children should not be taught things they will have to unlearn or correct later. For example on page 106 in the very excellent development of the subject of maps the statement occurs regarding directions, "It is evident that *north must be up*, etc." "It *could not be otherwise*. These are *always* the directions on a map when it is hanging and you should drill yourself so that you will never forget it." If the reader will turn to map facing page 140 he will observe that while Iceland is *up* directly above Puerto Rico it is forty-five degrees east of north of it. It is directly east of Great Slave lake yet it is much farther up toward the top of the map. In fact the rule is not a rule except in a very loose and general way for any small scale map of a large area. It would seem here that the pedagogical measuring off and carving out of a course of study may have its difficulties in some particulars, but the work certainly shows the value of keeping pedagogical principles in mind. It would seem, too, that the scientific statements of such a book should be above reproach, but we notice on page 74 that "The *air* takes *water* from the ocean, etc.," on page 48 that "rivers supply water where needed and remove it when not wanted," on page 135 that "coral polyps *build* hard limy coral" and that "millions of them may be found around a single island, and *every one is busy building its tiny skeleton* of lime." On page 30 we notice that after all the attempts to differentiate divides and watersheds they are still the same thing, that the Mississippi basin (see page 47) and the Mississippi valley (see page 31) are in no way different. There might also be some objections to speaking of bunches of cattle (pages 161, 167) instead of herds; or page (247) a group of ostriches instead of a flock; and one can scarcely help wondering what ideas a child might get from the statement regarding water-wheels under the picture (page 40) that "much smaller wheels are now used, and *they are usually kept out of sight.*" If accuracy of observation, thought and expression are to result from the study of the sciences, the text-books they are to study might well set the example of correct and accurate statement. And these seemingly small faults mar the more, because the ideas and presentation in this book in the main are so admirable. The suggestions for observation and practical work are many and fine, and a large number of references to further information make very thorough knowledge of any topic possible to both student and teacher. The illustrations are a particularly valuable feature of the work because they really illustrate geographical facts, the maps are clear and not over-crowded with details that hinder rather than help the student; and a feature greatly in the interest of convenience is the use of pages and maps of 16 mo size rather than the usual quarto size. The

name of the publisher is a sufficient guarantee of excellence in the make-up of the book. [The Macmillan Co., 60 cents.]

W. A. McBETH.

We all enjoy the personal reminiscences of old men. When these relate to experiences around which time and change have cast a kind of halo they become doubly interesting. To the teacher of to-day there is hardly a narrative more fascinating than that of the days when the master 'boarded round' and when his ability to keep school depended upon his ability to manage the big boys. Such a story is told by J. W. Hooper in a little book with three titles. On the outside cover is *Reminiscences of Three Score and Ten*, on the backbone is *Fifty Years in School*, on the title page is *Three Score and Ten in Retrospect*. Either title will do, for the author has told in a straightforward, entertaining manner some of his experiences as a teacher from 1847 up to a year or two ago, prefacing the narrative with an account of hardships encountered during his boyhood. Deep sympathy with children and an intuitive knowledge of child nature are apparent as Mr. Hooper tells his story; and the reader feels that the sturdy men who taught school thirty or forty years ago did so as earnestly as those who teach to-day according to more approved methods. [C. W. Bardeen, Syracuse, 80 pages, $1.00.]

If teachers everywhere could own, and at least once a year read a little book entitled *The Parker Anniversary*, it would surely be a good thing for the schools. In sixty-four pages are gathered, besides an introduction by Ossian H. Lang, twenty-four tributes from prominent educators, and an extended sketch of Colonel Parker's strenuous life and work. The one thing wanting in the booklet is the address which the Colonel himself delivered during the recent twenty-fifth anniversary at Quincy. [E. L. Kellogg & Co., 25 cents.]

A very acceptable book to many readers in these days when there is so much inquiry about social conditions and social problems is *Let There be Light*, by David Lubin. The book tells how a club of workingmen sought for the causes of poverty and of social inequality. The club was a serious one, and the attitude of its members was that of men seeking the truth. They represented various races, creeds and occupations. Without design they happen to interest, in their discussions, a young millionaire who is so impressed by their earnestness that he becomes one of them. The discussions are put in the form of a narrative, which will insure reading by many who might not care for abstract debates. The value of the book lies in the variety of opinions presented upon the numerous problems growing out of our complex life to-day, thus helping the reader to an unbiased and intelligent conclusion. [G. P. Putnam's Sons, 526 pages.]

Songs of All the Colleges is one of the best collections of college songs we have seen. As the title suggests, the list includes representative songs of the leading colleges, but in the hundred and seventy odd titles will be found nearly or quite all of the old favorites of all colleges. "Good-Night Ladies," "Listen to My Tale of Woe," "Nelly was a Lady," "Rosalie," and a dozen more like them are the property of every college, and no man or woman who has once sung them on the campus will ever cease to love them. There are also several of the taking songs that the quartettes and glee clubs are accustomed to sing in encores. The 215 pages are substantially bound in black cloth with handsome cover design. [Hinds & Noble, New York. $1.50.]

A book of fun, bearing on the board cover the picture of a rabbit wearing checked trousers and sitting on a toadstool, is entitled *Cotton Tails*. Within are forty-eight full pages of comical pen and ink drawings of animal life, with as many clever verses in large type on the opposite pages. Those who are familiar with the work of the author, George A. Beckenbaugh, will know that they may expect here a collection of drawings grotesque and ridiculous on the one side and yet satirically suggestive of certain animal traits which belong to some members of the human family. [R. H. Russell, New York, 7½ by 10¾ inches, $1.00.]

It is almost certain that the new volume in the "Four Great Americans" series, namely, *Four American Pioneers* will be the most popular with the boys of any yet published. It embraces the stories of the four great frontiersmen, Daniel Boone, George Rogers Clark, David Crockett and Kit Carson. The stories are well written, by Frances M. Perry and Katherine Beebe. The exciting stories of adventures that these daring men experienced will always be read with interest by children everywhere, but the view they give of early chapters in American history makes them valuable as something more than mere stories. Boys will want the book in

their own libraries, and every school library ought to have one or more copies. [Werner School Book Co., 255 pages, illustrated, 50 cents.]

A brief hundred pages translated from Victor Duruy's "Histoire Générale," and edited by Edwin A. Grosvenor gives *A Condensed History of the Middle Ages*. It will be remembered that Duruy's strong points as a historian are his discrimination as to what was most essential, and his great care in so verifying records as to make his narratives peculiarly authentic. [Thomas Y. Crowell & Co., 75 cents.]

Edwin A Grosvenor edits *A Condensed History of Modern Times*, translated from Victor Duruy's "Histoire Générale." It covers the interesting period of growth between 1453 and 1848, thus including the great renaissance, the commercial and economical revolutions caused by the discovery of the new world, the religious reformation, the philosophic revolutions brought about by Descartes and Bacon, and the political revolutions in America and France. No other history of these four hundred years is so free from non-essentials. [Thomas Y. Crowell & Co., 200 pages, $1.00.]

Number four in the "Riverside Art Series," edited by Estelle M. Hurll, is devoted to *Millet*. Besides the frontispiece, which is a portrait of the artist by himself, there are fifteen subjects showing the various phases of French peasant life to which Millet has so exclusively given his study. Among them are, of course, the well known "Angelus," "The Gleaners," and "The Man with the Hoe." As the editor points out in her introduction, the center of interest in Millet's pictures is the human figure, and this he aims to make typical. There are the usual interpretations, and a convenient pronouncing vocabulary. [Houghton Mifflin & Co., 96 pages, 30 cents.]

As a series of books representing modern methods in language teaching, the two volumes under the title *The Mother Tongue* are timely, and well calculated to supply a need. Book I consists of lessons in speaking, reading and writing English. There may be a question as to getting the child interested in language itself as a means, but if anyone can do it Miss Sarah L. Arnold, who collaborates with George Lyman Kittredge in writing the books, can. The methods employed to secure accuracy both in speaking and writing are most commendable, while the selections and examples used will help cultivate an appreciation and a taste for pure and graceful English. Book II is an elementary English grammar. It begins with an easy discussion of the nature of language, its relation to thought and to style, the processes which affect its growth and decay, the province of grammar, and its relation to usage. Such an introduction, read in class, as the authors suggest, and made the basis of informal talks, ought to be of real value in helping pupils over the difficulty of *why* they study grammar. In the formal study the authors make thought rather than words the basis of the science, as indeed most of the best books to-day do. [Ginn & Co., Book I, 320 pages, 55 cents; Book II, 331 pages, 70 cents.]

The name of Sir Joshua Fitch as the author of a book entitled *Educational Aims and Methods* is sufficient to recommend it to the teacher's notice. It is a collection of fifteen lectures on widely varying topics, but all educational in character. There is one each on Socrates, Ascham, Thring, Joseph Lancaster, and Pestalozzi; one discusses "Methods of Instruction as Illustrated in the Bible," another "The Evolution of Character," another manual training under the title "Hand Work and Head Work." A chapter on "The Sunday School of the Future" contains some well timed observations on the scope, methods and influences of that institution. [The Macmillan Co., 448 pages, $1.25.]

Professor Edward Channing of Harvard has prepared a *Short History of the United States* for school use. He is to be commended for omitting the mass of traditional matter and anecdotes which have their place in narrative and story rather than in pure history. The book is planned for a one-year course, and provides by suggestion and reference for a second year's work by students who have the time to devote to it. [The Macmillan Co., 401 pages, 90 cents.]

Child Life in Literature has added a fourth book to the excellent series by Etta Austin Blaisdell and Mary Frances Blaisdell. Tom the Water Baby, Alice in Wonderland, John Ridd, Tiny Tim, and other delightful characters are here introduced by such well chosen selections and illustrations as will create the desire to know more about them. [The Macmillan Co., 240 pages.]

The Care of the Child in Health by Nathan Oppenheim is, under present courses of study, a book for parents and the home rather than for teachers in the schoolroom. When courses of

study are as they should be books like this should have a place in advanced classes, especially classes of young women. The author's consideration of the subject extends from the mother before motherhood begins to the education and youth of the child. [The Macmillan Co., 308 pages.]

In the "Riverside Literature Series" number 140 is quintuple and reprints Thackeray's *Henry Esmond* complete, pictures and all. A handful of notes and a brief sketch of the author are added. (60 cents.) Number 141 contains *Three Outdoor Papers*, by T. W. Higginson. They are "The Procession of the Flowers," "April Days," and "Water Lilies." The delightful style of Colonel Higginson and his sympathetic insight into nature render this number one of the most pleasing in the series. [Houghton Mifflin & Co., Boston, 15 cents.]

COUNTY SUPERINTENDENTS OF INDIANA WILL MEET AT WINONA.

The state superintendent of public instruction, Frank L. Jones, has issued a call to the various county superintendents of the state to convene at Winona Park, June 26, 1900, to participate in the discussion of the following program:

TUESDAY P. M., JUNE 26.

2:00 (1) Opening.
2:15 (2) Some Problems in the Sanitation of our Schools.—Dr. Severance Burrage, Purdue University.
2:50 (3) Discussion.—I. B. Webber, M. D., Secretary city board of health, Warsaw; J. M. Bash, M. D., Secretary county board of health, Warsaw.
3:10 (4) Classification and Gradation of Schools. Superintendent C. A. Van Matre, of Delaware county.
3:35 (5) Discussion.—Superintendent L. H. Hamilton, of Jasper county.
3:50 (6) General Discussion.
4:00 (7) Miscellaneous.

WEDNESDAY A. M.

9:00 (1) How much Sanitary Science shall be taught in our Public Schools?—Dr. Burrage.
9:30 (2) Centralization of Schools.
(a) From the Standpoint of the School. (20 min.) Superintendent Wm. E. Wineburg, of Wayne county.
(b) From the Standpoint of the Child. (20 min.) Superintendent E. E. Robey, of Howard county.
(c) From the Standpoint of the patron. (20 min.) Superintendent George W. Ellis, of Elkhart county.
(d) General Discussion. (20 min.)
11:10 (3) Address.—W. P. Kane, President Wabash college.
8 P. M. RECITAL.

THURSDAY A. M.

9:00 (1) The influence of Fine School Architecture and Decoration.—Dr. Burrage.
9:30 (2) Discussion.—Superintendent A. A. Hughart, of Porter county.
9:45 (3) Needed Amendments to Text-Book Law.—Superintendent Wm. F. Landes, of Marion county.
10:00 (4) General Discussion.
10:15 (5) State Adoption of Uniform High School Text-Books.—Superintendent James H. Clark, of Bartholomew county.
10:30 (6) General Discussion.
10:45 (7) Need and Means of Obtaining a School Library at every one of the Central Points where Schools are Centralized.—Superintendent Charles W. Paris, of Randolph county.
11:00 (8) General Discussion.
11:15 (9) Value of the County Superintendents' Association and Nature of its Work.—Superintendent Elijah A. Gladden, of Scott county.
11:30 (10) Miscellaneous and Adjournment.

I. F. MYER, President.

PROGRAM FOR TEACHERS OF HISTORY.

The history section of the Indiana state teachers' association will hold its third annual meeting Friday and Saturday, June 15 and 16 at the Grand hotel, Indianapolis. The excellent program is given herewith:

FRIDAY—2:30 P. M.

Status of History Teaching in the High Schools of Indiana.—Mr. Fred. Austin Ogg, Indiana university.

General Discussion.

NOTE.—This paper will be of especial interest to all high school teachers of history.

Paper.—Report of the Committee of Seven on History in American Secondary Schools.—Miss Elisabeth Messmore, Terre Haute high school.

Discussion.—Superintendent S. K. Gamaid, Lima.

FRIDAY—8:00 P. M.

Paper.—Report of the Committee of Seven on History below the Secondary Schools.—Prof. E. L. Hendricks, Mitchell.

Discussion.—Miss Lydia R. Blaich.—Supervisor Indianapolis schools.

Collateral Reading with History Work.—Supt. J. A. Carnagey, Columbus.

Discussion.—Prof. W. C. Goble, Fairmount academy.

SATURDAY—9:30 A. M.

Presentation of History Work in County Institutes.—Dr. J. A. Woodburn, Indiana university.

Discussion.—Supt. George R. Wilson, Dubois county.

Indiana History.—How Much, and Where in the Course?—Supt. Louis Lambert, Fowler.

Discussion.—Prof. W. S. Davis, Richmond high school.

Time will be given for the general discussion of each paper.

All teachers of history and kindred subjects are cordially invited to attend, to join the section, and to participate in the exercises.

County and city superintendents, high school principals, township trustees, and other school officers who are interested in the improvement of the history work in our schools, are earnestly requested to attend and contribute to the value of the meeting.

CYRUS W. HODGIN, President.

INDIANA STATE BOARD QUESTIONS FOR MAY, WITH DISCUSSIONS.

HISTORY.

1. In what way did Brazil become a Portuguese dependency?
2. State the main difference in institutional life between the northern and southern English colonies.
3. What was the "Boston Port Bill," and of what act was it a consequence?
4. What were the "Alien and Sedition Acts?" When enacted, and why?
5. What were the terms of the treaty of peace made with Mexico in 1848?
6. What was the first military event of the civil war?
7. What were the causes of the Spanish-American war? The results?

1. Brazil was discovered in 1499 by Pinçon, a companion of Columbus. He made no settlement but took possession of the country in the name of the king of Spain. Next year, the great Portuguese, Cabral, was driven by storm to shelter on the Brazilian coast and took possession in the name of his sovereign. Amerigo Vespucci was sent to explore the country thoroughly and report to Portugal. Joao III. established a permanent form of government in 1531. When Napoleon resolved upon the invasion and conquest of Portugal, the prince regent fled to Brazil for refuge in 1807.

2. It was the difference between the Puritan and the cavalier. The former stood for intolerance, rigid discipline, self-denial, sternness; the latter for ease, comfort, aristocracy, and the gentler amenities of life. These characteristics permeated all the respective institutions.

3. It was an act of retaliation of Great Britain on the citizens of Boston for the part they had in the destruction of tea.

4. They were passed during Adams' administration. The alien law empowered the president to exclude any person whose presence here might be deemed dangerous to the country. The sedition laws were for the punishment of persons who should speak, write, or publish anything false or malicious against the president or the government. Both acts were unpopular and soon became dead letters.

5. The United States obtained the territory of California, New Mexico and Texas. The United States paid Mexico $15,000,000, and assumed the debts of Texas and certain other obligations.

6. The firing on the "Star of the West" January 9, 1861, and the subsequent bombardment of Fort Sumter, April 12, 1861.

7. The offensive conduct of Spain in Cuba aroused a protest which, being disregarded, and intensified by the destruction of "The Maine," led to the declaration of war by congress. Spain lost Cuba, Puerto Rico and the Philippines, receiving an indemnity of $20,000,000.

GEOGRAPHY.

1. How do you account for the very great range of temperature from winter cold to summer heat in the northern interior regions of the United States?
2. Discuss trade and trade routes of India.
3. How are each of the following governed: New Mexico, Alaska, India, Cuba, Cape Colony?
4. What products are shipped from Puerto Rico to the United States?
5. What important South American boundary dispute was settled by arbitration within the last year?
6. What are the large subdivisions of China?
7. Discuss the trade of the Mediterranean.
8. Where are the following: Korea, Klondyke, Delagoa Bay, San Juan?
9. Write a few lines on the occupations of the people of Belgium.
10. Trace the world ridge or primary highland through the various continents.

1. Land areas are heated and cooled more rapidly than water areas. The clearer air above plateaus transmits heat to and from the earth more freely than the air over lowlands. The northern interior regions of the United States are far from the sea, and are also mostly above 2,000 feet in elevation.

2. The trade routes of India consist of railways, rivers, and canals, the latter used chiefly for irrigation. The principal products are rice, wheat, millet, many spices, cotton, opium, coffee, tea, cinchona, silk, muslin, carpets, embroideries, jewels, gold, silver and other artistic metal work. The most important trade routes to and from India are by way of the Mediterranean and Suez Canal with Europe, and across the Pacific with America.

3. New Mexico has an organized territorial government with a legislature elected by the people, and a governor and other officers appointed by the President. Alaska is a district with governor and judge appointed by the President. The laws of Oregon are in force. The government of India is very complicated. There are governors-general and executive and legislative councils appointed by the British crown, for India and several subordinate presidencies and provinces. Many of the native states maintain their own forms of government under the advice and guidance of a British resident officer. Cuba is under the control of a military governor and the War Department of the United States. Cape Colony has a governor and executive council appointed by the crown, and a legislative assembly elected by the people.

4. Coffee, sugar, tobacco.

5. Between Venezuela and British Guiana.

6. Manchuria, Mongolia, China, East Turkestan, Koko Nur, Tibet.

7. The Mediterranean countries have a large trade with all the rest of the world in both exports and imports.

8. (1) A peninsula of Eastern China extending to the South between the Japan and Yellow Seas. (2) A creek in North West territory near where the Yukon river crosses the boundary into Alaska. (3) A bay on the southeast coast of Africa. (4) The capital of Puerto Rico on the north coast of the island.

9. The Belgians are engaged in agriculture, mining and manufacturing industries. Rich mines of coal and iron give occupation to many miners, while manufactured products, such as cutlery, firearms, glass, porcelain, etc., are produced. Beet sugar is produced in large quantities while large quantities of textile fabrics are produced.

10. The world ridge is traced in the main mountain systems of the continents; i. e., the Cordilleras of North and South America, the Altai and Himalayas of Asia, and dividing it extends south along the eastern side of Africa and west across Southern Europe.

LITERATURE.

1. What poem do you like best? Why?
2. Main facts in the life of some essayist.
3. His literary characteristics.
4. Which do you prefer, English or American literature? Why?
5. Give a brief outline of the story of some novel that you have read.
6. Describe the most important situation in this novel.
7. Describe a character in some play of Shakespeare's.
8. Comment on one of Whittier's poems.
9. What seems to you to be Webster's best speech? Why?
10. Write a paper of not less than 150 words on "The Best Way to Kill Time."

As usual the Literature questions are of such a nature that the individual is free to express himself.

SCIENCE OF EDUCATION.

1. In the view of the author of *Organic Education*, what are the great ethical advantages of teaching under the organization plan?
2. Is it reasonable to require teachers to be wide and thorough students of psychology, ethics, sociology, economics, art, etc.? Give reasons for your answer.
3. Why is the "story" the typical form in which materials for the child's study are set before his mind?
4. By "story" as here used is meant "the organized, continuously inter-related body of ideas," which is addressed to the child. What advantages are there in thus asking him to study a body of organized subject matter?
5. In telling a story to the child the "sequence" method is followed. What does this mean?
6. What is meant by the "stream of consciousness?"
7. Is it possible, and if so, is it desirable, to get rid of all emulation in the school? Discuss, giving reasons.
8. A recent writer says that "habit is not only second nature, but that it is ten times nature." What would he seem to mean by this, and is it correct?
9. Recent studies seem to show that it is a law of the human mind that some kind of expression follows every impression—that every stimulus begets some kind of reaction. If this is true, what important educational implications does it contain?
10. What are some of the advantages and disadvantages of private instruction as compared with class instruction?

1. It gives capacity for rational self-determination of conduct.

2. Yes. The teacher is engaged in developing the mind of the child in its triple phases. Psychology deals with the laws of mind and these other subjects furnish the means of development in the different directions.

3. It furnishes a connected way of presentation.

4. It induces logical habits of thought and presentation.

5. The emphasis of the proper, logical, progressive relation.

6. The continuous, unbroken chain of mental activity.

7. If emulation, as the word seems to imply, carries with it rivalry, it is desirable to get rid of all emulation in the school. The pupil should be stimulated to make a comparison between himself as he is, and himself as he ought to be, and to attain that better self.

8. It is correct, because we are in character merely the sum-total of all our experiences.

9. That the "give" should equal the "take" in

education; that expression should be given as prominent a place as impression.

10. Private instruction may be able to consider more carefully the particular needs of the individual. It may set the pace to suit the individual. It may make it possible to direct or hold in check certain tendencies. On the other hand, the class furnishes best the conditions of life, and the means for developing character.

PHYSIOLOGY AND SCIENTIFIC TEMPERANCE.

1. What are the functions of the external and middle portions of the ear?
2. What is the source of the heat of the body?
3. What are the functions of the kidneys?
4. What is meant by tidal air? Residual air? Reserve air?
5. What are the uses of the saliva?
(b.) Which is the most important use?
6. Describe the structure of an artery. A vein.
7. What constitutes the lymphatic system?
8. What are the characteristics of the alcoholic appetite as contrasted with the appetite for foods generally?
9. How does the effect of an anæsthetic differ from the effect of a narcotic? Name an anæsthetic. A narcotic.

1. The external ear gathers and transmits vibrations to the membrane of the middle ear. The bones of the middle ear transmit vibrations from the membrane of the middle ear to the membrane of the oval window. The middle ear also receives vibrations from the scala tympani, which otherwise might be reflected so as to interfere with distinctness of hearing.

2. The sources of heat in the body are the chemical changes which are continually going on in all parts of the healthy body.

3. The function of the kidneys is to separate water, urea, common salt and some other mineral substances from the blood.

4. Tidal air is that which is moved at each inspiration or expiration.

Reserve air is that which may be, but seldom is moved in respiration.

Residual air is that which cannot be expelled from the lungs by expiration.

5. The saliva facilitates swallowing and speaking, changes starch to sugar and aids in stomach digestion. Probably its use in digestion would be considered most important.

6. The arteries are membraneous tubes made up of three fairly distinct coats. The inner coat is a serous membrane containing many elastic fibers. The middle coat consists mainly of elastic fibers and muscular fibers that are in general transverse or circular. The elastic fibers are more abundant in the larger arteries, the muscular in the smaller arteries. The outer coat is a thick layer of connective tissue. The veins are similar in structure, but the middle layer is much thinner than in the arteries, and the inner coat often forms folds which serve as valves.

7. Much of the plasma of the blood is forced out of the blood vessels into the intercellular spaces of the body where it is called lymph. A system of thin walled, many valved tubes gathers up this lymph, and emulsified fat from the intestines and conveys them to the subclavian veins. This system of vessels, with numerous glands in various parts of the body constitute the lymphatic system.

8. The appetite for alcohol or for food generally, comes in response to a call from the tissues of the body. Each of these appetites may be legitimate, each may be abused and become a cause of suffering and disease. The appetite for alcoholic liquors is more likely to lead to intemperance, and the intemperate use of alcohol leads to much greater evils than does the intemperate use of other substances.

9. In general, narcotics and anesthetics have the same effects, they deaden pain and cause sleep. The anesthetic is more rapid in its action and its effects are less permanent.

Chloroform is an anesthetic.

Opium is a narcotic.

ARITHMETIC.

1. Should number work be concrete with beginning pupils? Give reason for your answer.
2. Add 210181
612884
510876
999999
876548
314567
415683
717777
816718
180005
567086
312100
518877
610018
877655

3. What is the side of the square field whose area is ten acres?
4. A and B can do a piece of work in six hours. After A has worked alone for three hours, B commences, and, working alone, finishes the work in ten and one-half hours. In how many hours can A do the work alone?
5. Do you think square and cube root should be taught thoroughly in the public schools? Give reasons for your answer.
6. At what rate will $584.00 gain $65.70 in one year six months?
7. Algebra. Find the number whose third part added to its seventh part gives a sum equal to twenty.

1. It should be largely concrete, merging gradually and continuously into the abstract. Magnitudes and relations do not exist for the beginner apart from objects. The power to think of things not present to the senses comes only through the concrete.

2. 849924.

3. 10 A. = 1600 rds. $\sqrt{1600}=40$, length of side.

4. In three hours A does half of his share and leaves half for B to do. B does all his own part

and $\frac{1}{3}$ of A's in $10\frac{1}{2}$ hrs. In 1 hr. B does $\frac{1}{10\frac{1}{2}}$ or $\frac{2}{21}$ of his part and $\frac{1}{10\frac{1}{2}}$ of $\frac{1}{3}$ or $\frac{1}{21}$ of A's. In 6 hrs. then, B would do $\frac{1}{3}\frac{2}{1}$ of his part and $\frac{6}{21}$ of A's. But in 6 hrs. B would do $\frac{6}{21}$, or all his own part. The difference between $\frac{6}{21}$ of B's and $\frac{1}{3}\frac{2}{1}$ of B's, or $\frac{2}{21}$ of B's$=\frac{6}{21}$ of A's. Then $\frac{2}{21}$ of B's $=\frac{1}{3}$ of $\frac{6}{21}$ or $\frac{2}{63}$ of A's, and $\frac{6}{21}$ B's$=\frac{1}{3}\frac{2}{1}$ or $\frac{2}{7}$ of A's. Their respective parts, then, are as 3 and 2, total 5. In one hour, then, A does $\frac{3}{5}$ of $\frac{1}{3}$ of the work or $\frac{1}{10}$; hence he would do the whole in 10 hours.

5. So far as practical value is concerned, no. In technical work, where these processes are required, they are soon and easily learned. Mental drill can be secured from the more familiar arithmetical processes.

6. Interest at one per cent. is $8.76. $65.70+ 8.76 gives $7\frac{1}{2}$ as the rate.

7. $\frac{x}{3}+\frac{x}{7}=20$. Whence $x=42$.

READING.

(Based on the general field of Reading.)

1. Underscore the emphatic words in the following: "What stronger breast-plate than a heart untainted! Thrice is he armed that hath his quarrel just! and he but naked, though locked up in steel, whose conscience with injustice is corrupted."
2. What is the proper pronunciation of *a* and *the* in reading?
3. What is the difference between enunciation and pronunciation?
4. Can a pupil properly read a selection, the meaning of which he does not understand?
5. How do you express irony and sarcasm in reading?
6. What tone befits prayer—as the Lord's Prayer?
7. Read the following to the Superintendent:

"Beauty is but a vain, a fleeting good;
A shining gloss that fadeth suddenly;
A flower that dies almost in the bud;
A brittle glass that breaketh presently;
A fleeting good, a glass, a gloss, a flower,
Lost, faded, broken, dead within an hour."

(Based on *How to Teach Reading.*)

1. What is meant by the "atmosphere" of a selection?
2. In what part of the following is the "central idea?"—

"There's not a flower that decks the vale,
There's not a beam that lights the mountain,
There's not a shrub that scents the gale,
There's not a wind that stirs the fountain,
There's not a hue that paints the rose,
There's not a leaf around us lying
But in its use or beauty showing
God's love to us, and love undying."

3. What is meant by "succession of ideas" in the selection to be read?
4. In what "time" and "pitch" should a parenthetical clause be read?
5. What is meant by "values," as applied to reading?
6. How do you distinguish between conscious slow time-rate, on the part of the reader, and mere hesitancy?
7. What do you find to be the principal obstacles to be overcome in teaching the pupil to read well?
8. What is the time-rate for the following, and why?—"How amiable are thy tabernacles, O Lord of Hosts! My soul longeth, yea, even fainteth for the courts of the Lord. My heart and my flesh crieth out for the living God."

1. "What *stronger breast-plate* than a *heart untainted! Thrice* is he *armed* that hath his *quarrel just!* and he but *naked*, though locked up in *steel*, whose *conscience* with *injustice* is *corrupted.*"

2. As "a" in *far* shortened or more commonly as "u" in *tub;* "the" becomes "thĭ" before vowels and "thŭ" before consonants.

3. Enunciation has reference to correct vocalization of individual sounds or groups, while pronunciation refers to the correct articulation of these into words.

4. No; unless by accident.

5. By circumflex inflections.

6. Low, rich, solemn.

Based on *How to Teach Reading.*

1. "Atmosphere is that sympathetic quality of voice that manifests the spirit of literature." (P. 184.)

2. The central idea is expressed in the last two lines.

3. A passage is made up of small phrases more or less intimately connected. These phrases express parts of the thought in the natural order of its development. This orderly movement is called "succession of ideas."

4. In faster "time" and lower "pitch" than the context, as a rule.

5. "With every change of thought and emotion comes another form of expression and these different forms we may call values." (P. 157.)

6. The first is the "manifestation of the child's thought—measurement," while the second is the result either of physical trouble or failure to comprehend.

7. (1) Failure to comprehend fully the thought and feeling, and (2) lack of power to give vocal expression to this comprehension.

8. Rather slow, in order that the appeal in it may be more impressive.

GRAMMAR.

"There is strong reason to suspect that some able Whig politicians, who thought it dangerous to relax, at that moment, the laws against political offenses, but who could not, without incurring the charge of inconsistency, declare themselves adverse to relaxation, had conceived a hope that they might, by fomenting the dispute about the court of the lord high steward, defer for at least a year the passage of a bill which they disliked and yet could not decently oppose."—*Macaulay.*

1. (a) Name the principal clause in the above.
 (b) Name one which is an objective clause and one which is an adjective clause.
2. Underscore with one line the subjects and with two lines the predicates of the subordinate clauses.
3. Give all the modifiers of (a) "politicians;" (b) "could declare;" (c) "might defer."
4. State what each of the following modifies: (a) "dangerous;" (b) "adverse;" (c) "high steward;" (d) "at least;" (e) "which."
5. Give syntax (case and reason) of (a) "it;" (b) "laws;" (c) "charge;" (d) "themselves;" (e) "passage."
6. Select the infinitives and participles and state what office each performs.
7. Select three verbs that are in different tenses and give the tense of each.
8. Is it expedient to devise erroneous forms of false syntax for pupils to consider?

How far would you carry the correction of wrongly coined and misused words and improperly constructed sentences?

9. In what order should the following parts of speech be taught: preposition, pronoun, verb, participle, noun? Why?

10. Write fifteen or twenty lines on one of the following subjects in some such form as you would place before a class of pupils as a model for their guidance:
(a) The schoolmaster in *The Deserted Village.*
(b) Inventions—past and future.
(c) The inauguration of a president.

1. (a) "There is a strong reason to suspect." (b) The remainder of the sentence is objective; "which—oppose."

2. "*Some—relaxation;* HAD—OPPOSE; "*they*—OPPOSE."

3. (a) "Some," "able," "whig" and the clause which follows; (b) "not," "without—inconsistency," "themselves adverse to relaxation." (c) "by—steward," "at least," "for a year," "the passage—oppose."

4. (a) Predicate-like element of a clausal phrase, which is a direct objective modifier of the verb, "thought." (b) Same. The phrase is direct objective modifier of the verb, "declare." (c) "lord." (d) "defer." (e) "disliked" and "could oppose."

5. (a) Obj., subject-like element of the clausal phrase; (b) Obj., direct obj. modifier of verb, "relax;" (c) Obj., direct obj. modifier of the part. "incurring;" (d) Obj., subject-like element of the clausal phrase; Obj. direct objective modifier of the verb phrase, "might defer."

6. "To suspect," adj. modifier of the word, "reasons;" "to relax," adverbial modifier of word, "dangerous;" "incurring," principal word of prep. phrase; "fomenting," principal word of prep. phrase.

7. "Is," present; "thought," past; "had conceived," past perfect.

8. I should not devise forms of false syntax; the pupils use enough. Correct all mistakes made by the pupils at all times. When the pupils are mature and have studied technical grammar, they may with profit dwell for some time on the most common mistakes.

9. The pupils get a general idea of "parts of speech" in classifying words. When they begin to study these "parts of speech" in detail, i. e., their properties, etc., they should be taken in the following order because it is the order of dependence: Noun, pronoun, verb, participle, preposition.

A MERITED SUCCESS.

It is always a pleasure to be able to report the success of those who advertise with us, and especially when many of our readers through this advertising have been in some substantial way benefited, and have in turn contributed to the success referred to. From its establishment one of our staunchest patrons has been the Vories Business College of Indianapolis. When Professor Vories took charge of the school it was a small affair. Keen business tact and an ability to appreciate the kind of training demanded for business success has enabled him to build up a great and constantly increasing attendance. At present it numbers about 600, probably the most remarkable enrollment ever reached by a business college in this section of the country. More than half the states in the Union are represented in this school, with some students from Canada and Cuba. The faculty includes sixteen members, and plans are maturing for increasing this list, as well as the material resources of the school, in view of the anticipated increase in attendance next year. A number of student organizations add to the attractiveness of the school; a band of twenty uniformed men, an orchestra of eleven, a mandolin and guitar club of seventy-five and two base-ball clubs. Great credit is due Professor Vories for building up such a school and thus putting within reach of every ambitious young man or woman the opportunities of success

EDUCATIONAL, LITERARY AND GENERAL ITEMS.

Paul H. Wilson is the new superintendent at Milton, Ind.

A. A. Norris, for two years the efficient superintendent of the Syracuse (Ind.) schools has been re-elected for the third year.

C. H. Drybread becomes superintendent of the Hartford City schools, taking the place of F. M. Beard, who engages in business.

President A. H. Yoder of Vincennes university leaves his present situation at the close of the present term after four years of pleasant and successful work.

Macmillan's "Pocket English Classics" series has added to its list De Quincey's *Confessions of an Opium Eater.* It is edited with introduction and notes by Arthur Beatty.

C. E. Greene, principal of Frankton high school, has been elected to the superintendency of the Dublin schools. Mr. Greene's record at Frankton is an excellent one.

The high school building at Bloomington was burned May 11. It will be at once rebuilt, and Superintendent Glascock, who is reelected, will help supervise the construction.

Virgil R. McKnight, principal of the Marion high school, has been unanimously elected for

the fifth year. During these five years the high school has grown in numbers from 180 to 400.

Superintendent J. W. Hamilton of Monticello was uanimously chosen to succeed W. A. Millis at Attica, but owing to re-election and contract at Monticello was obliged to decline the honor.

A large circle of readers will be sorry to hear of the suspension of *Learning by Doing*. It was bright and vigorous, but its promoters have found it too expensive a luxury. It 'should have died hereafter.'

The first graduating exercises from a township high school in Ripley county were held at New Marion, May 11, Jas B. Royce principal. This is a substantial mark of progress for the Ripley county schools.

Professor Levi Hooker, for some years principal of the Blankenburg school in Evansville is promoted to the principalship of the fine new Chandler school in that city. His former place will be taken by E. E. Linxweiler.

George H. Mingle has been selected to teach mathematics in the Anderson high school. Mr. Mingle had charge of the Churubusco schools for three years, and at present is attending the state university doing post graduate work.

The fifth annual conference of Indiana science teachers was held in Indianapolis May 4 and 5, and reports a very satisfactory meeting. John Le May is president for the next year and the meeting will probably be held in Terre Haute.

The Monthly School Bulletin, published under the supervision of R. H. Harvey, superintendent of the Boone county schools is a bright little sheet, well calculated to promote the interests of the schools and keep superintendent and teacher in close touch with each other.

The report comes from Rushville that politics has entered the schools there, resulting in the dismissal of Superintendent Samuel Abercrombie. His administration of the schools for seven years saw an advance in enrollment from 655 to 894, and a growth in the high school from 45 to 146.

Superintendent E. F. Sutherland has been retained by the Jasper school board at an increased salary. In addition to this the term will be made nine months, new books and supplies will be furnished, and everything done as called for by the superintendent. The Jasper schools are prospering.

Superintendent Mark Moffett of Waveland, Ind., has been elected as superintendent of schools at Livingston, Montana, salary $1,800. Mr. Moffett is a graduate of the state normal school and has done considerable work at the state university. He will certainly prove worthy of this handsome promotion.

The International Monthly has established a fund which, every year, will be divided into fellowships of $150 each, and distributed among teachers who shall comply with the requirements for participation in its benefits. Those who are interested should write to "The Fellowship Editor" of the monthly at Burlington, Vermont.

The Indiana Academy of Science held its spring meeting at Terre Haute, May 25 and 26. Elaborate preparations were made for an exhibition with liquid air, but, according to an injunction from the United States court, air in this uncommon condition can be used by a favored few only. The exhibition was postponed indefinitely.

Teachers all over the state of Indiana will find it hard to realize that Mr. J. W. Walker has severed his connection with the American Book Company. His large circle of friends will be interested to hear that he expects to remain in the state, and that he will be a general representative of the New York Life Insurance Co., with headquarters at Indianapolis.

Under the direction of Profefsor Charles M. Curry, students of the Indiana state normal school recently gave a very successful dramatic entertainment in which three farces were played. *The Mouse Trap* and *Room Forty-Five* by William Dean Howells, and *Christmas Boxes* by M. E. M. Davis. Miss McWilliams as "Amy Somers," Miss Rapp as "Norah O'Darrah," and Mr. Alfred Henry as "Dennis McShane" were much applauded, though every part was well taken. A nice sum was netted for the benefit of the Woman's League and the Men's Social Club.

Many people who have felt the disadvantage under which reputable business schools have labored because there were shoddy schools which did not deserve the name, are interested in every worthy attempt to raise the standard of commercial courses. The Garvin Commercial College at Terre Haute, Ind., is taking a most commendable step in this direction. It will require for admission a practical knowledge of the common branches, thus calling at once for a better class of students. This will be sure to give business men greater confidence in the school, and will enable the proprietors to place their graduates into better positions.

The citizens of Fort Wayne are greatly exercised over the action of its school board in dismissing Superintendent J. N. Study without any

warning whatever, and without presenting any complaints to show that his work during a three-year's period had been unsatisfactory. The friends of Professor Study charge that the retirement was due entirely to personal feeling. Mr. Study himself states that if there had been any complaints regarding his conduct of the schools he would have felt content to take the consequences. But he properly regards it an injustice to be deposed without a hearing. Principal Chester T. Lane succeeds him. Professor Lane has been identified with the schools for some time, and will doubtless make a most efficient superintendent.

An interesting educational meeting was held at Anderson, May 4, in the interest of better feeling between the public schools and the colleges. Dr. Joseph Swain of Indiana university talked upon "Higher Education from a National and Individual Standpoint." Professor John L. Campbell of Wabash college discussed "The College Man in the Business and Professional World;" Dr. Burris of the University of Indianapolis spoke of "College Women and their Work;" W. E. Stone of Purdue university talked upon "The College Man in the Industrial World." Dr. Hickman had for his subject "The Education of the Future. "Dr. W. T. Stott of Franklin college delivered an address upon "Indiana and Her Institutions of Higher Learning." Dr. Morrissey of Notre-Dame discussed "The Need of Educated Men and Women," and Dr. Joseph J. Mills of Earlham college closed the program in a forceful address upon "The Best Gifts for Our Children."

The exercises of commencement week at Purdue university will begin on Sunday, June 3, at three o'clock, at which time the Rt. Rev. Joseph Marshall Francis D. D., Bishop of Indiana, will deliver the baccalaureate address to the graduating class. On the evening of the same day the annual address before the Christian Associations of the university will be delivered by Judge Daniel P. Baldwin of Logansport. On the afternoon of Monday, June 4, the Glee and Mandolin clubs will give their annual concert, and in the evening the University Club will give a reception to the alumni and graduating class. Tuesday, June 5, is given over to the exercises of class day with the alumni banquet in the evening. Wednesday, June 6, is commencement day and the address will be delivered by Walter H. Page of New York city, on *The Right Use of English in a Democracy*. The program of the week will be concluded by the meeting of the alumni association at 3 o'clock on commencement day.

Underneath all our modern machine work there must lie the same quality upon which the scholar of the earlier generation exclusively relied, says Professor Ephraim Emerton in the June *Atlantic*. He had no training by any organization whatever. If he were trained at all, he trained himself. He came to be what he was by virtue of the inner impulse which alone, maintained through years of action and intensified by time, can guarantee the quality of a man.

Obviously this quality is difficult to describe. It cannot be measured in terms of academic honors. Erasmus of Rotterdam, explaining why he felt obliged to take a doctor's degree in Italy, says: "Formerly a man was called 'doctor' because he was a learned man; but nowadays no one will believe a man is learned unless he is called 'doctor.'" A college president seeking a professor not long since made it a *sine qua non* that the candidate should be a doctor of philosophy. Another man might know more, be more highly qualified as a man, and a more effective teacher, but he must give way to the man, very possibly of less value, who had the trade-mark of his profession. I have known many a man whose great fundamental need was intellectual refinement and culture sacrificed to this semi-civilized demand for a certifiable kind of expert training.

Parties desiring to visit Richmond, Old Point, Norfolk, Virginia Beach or Washington en route to or from Charleston during meeting National Educational Association, July 7-13, 1900, should see that their tickets read via Atlantic Coast Line, between Charleston and points named. This is the shortest and most direct route and the only line operating through trains, coaches and Pullman cars between Charleston, Richmond and Washington. For further information address

W. H. Royall, General Agent, Charleston, S. C

H. P. Clark, General Eastern Agent, 229 Broadway, New York.

J. H. Johnson, New England Agent, 300 Washington St., Boston, Mass.

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H. M. Emerson, General Passenger Agent, Wilmington, N. C.

WHY WASTE YOUR VACATION?

A vacation is a good thing if properly employed. Everybody wants one, and almost everybody needs it. Whether beneficial to mind or body depends, and altogether, on how the time is spent. It is not idleness, that the business man, the student, or clerk needs. In mental and physical stagnation weariness increases, and itself becomes wearisome.

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Indianapolis.

THE INLAND EDUCATOR.

A JOURNAL FOR THE PROGRESSIVE TEACHER.

WALTER W. STORMS, Editor.

PUBLISHED MONTHLY AT

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BY

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THE INLAND EDUCATOR

A JOURNAL FOR THE PROGRESSIVE TEACHER

Edited by Walter W. Storms

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JULY, 1900.

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THE INLAND EDUCATOR.

A JOURNAL FOR THE PROGRESSIVE TEACHER.

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VOL. X. JULY, 1900. No. 6.

Victory at Fort Wayne.

Superintendent Study has been re-elected to the superintendency of the Ft. Wayne schools for a period of three years at his old salary. This is the happy termination of the recent school trouble in Ft. Wayne. A great victory has been won by the people not only for that city but for schools and school-teachers everywhere. It is refreshing and reassuring to know that a superintendent who has done his duty always, and who has been recognized as an efficient school man cannot be unceremoniously dismissed without a hearing at least. The uprising of the best element of the people with its demand that the wrong be righted was successful as it must always be. Ft. Wayne has hitherto had some boards of education which to our thinking were almost ideal. A return to the stamp of men who composed these boards would probably obviate the recurrence of any such demonstrations as were recently experienced. This leads us to remark that school affairs must be conducted without regard to politics, religion, corporations, banks, soldier ancestry, lodge affiliation, or any other thing except eternal fitness for the work that is to be done. We congratulate Ft. Wayne, Superintendent Study and the profession on the victory.

* * *

Important Changes Among the Superintendents.

The stir in important school centers may be taken as one indication of a growing interest in things educational, and of a growing belief in the importance of expert supervision. Salaries have advanced, and there is no indication of a surplus of men qualified to superintend the schools of cities like Chicago, Indianapolis, Baltimore, Rochester, St. Paul, New Haven, Grand Rapids. It is notable that the vacancies in nearly every case have been created by moving some one along the line to a better place, and that generally the men who have been most ready for advancement have been moved up to occupy the vacancies. These movements have been comparatively free from politics and the quest has generally been for the best available man. Dr. Edwin G. Cooley of the La Grange (Ill.) high school, and president-elect of the Chicago normal school to succeed Colonel Parker, has now been chosen as Dr. E. Benjamin Andrews' successor for superintendent of the public schools of Chicago. The choice is considered a good one. THE EDUCATOR stated in its issue of January last that Dr. Cooley is a man who could decline tempting offers of promotion for the sake of remaining where the facilities for work and growth were favorable—one of the surest indications of strength of character. He is a native of Iowa, a graduate of the Iowa state university, and has a degree from the university of Chicago. The board of education ought to give him large powers and hold him responsible for large results. The appointment of Superintendent C. N. Kendall to Indianapolis has already been mentioned. His coming is anticipated with much interest. Frank H. Beede, for one year past principal of the New Haven high school takes the place left vacant by Mr. Kendall. We have also noticed the promotion of Superintendent S. T. Dutton of Brookline, Mass., to a fine position in Teacher's college, New York. James H. Van Sickle goes from North Denver to Baltimore, his place being taken by Dr. Charles E. Chadsey of Durango, Colorado. W. H. Elson of West Superior goes to Grand Rapids, Mich. Frederick W. Atkinson has been taken from the principalship of the Springfield, Mass., schools to build an educational system in the Philippines. Rochester, St. Paul and a few other fine places are still seeking the best man.

* * *

A Novel Commencement Souvenir.

With the compliments of the class of 1900 THE EDUCATOR has received a neat pamphlet of forty-two pages containing

the graduating addresses of the present class in the Alexandria high school. This impresses us as one of the most substantial and sensible souvenirs possible. Such subjects as "Wireless Telegraphy," "Trusts," "The Relation of *Ben Hur* to Fact," and "Some Conceptions of the American Girl" suggest that this class of eleven is prepared to take its place in the great army of new recruits just entering the field.

* * *

A Familiar Indiana Picture.

Many readers of THE EDUCATOR will enjoy the sketch which editor Henry R. Pattengill of Michigan writes to describe one of his visits to Indiana. This habit of Mr. Pattengill of frankly commending to his own teachers what he finds good elsewhere is worthy of general imitation. At the same time it is pleasant to those who are commended. He rarely comes over the line but he has something good to say when he goes back.

"Last week ye editor took a trip to Albion, Ind., to address the commencement exercises of the eighth grade graduates of the rural schools in Noble county. County Superintendent Adair had matters in charge. The day was fine, the town was in gala attire, the flag floated from the handsome Norman tower of the beautiful court house. Early in the morning the teams began to arrive and by ten o'clock the town was filled with a crowd of jolly people. It was an inspiring sight to see the substantial farmers and their families, the gay ribbons and hats, the happy children and the general good cheer. There were sixty-four graduates to take their diplomas, and the address was made to them and the immense crowd that gathered on the green by the side of the court house. The afternoon was devoted to athletic contests, and thus the day was made a red letter one to the rural schools. It is seemingly the day of the year. No other occasion draws out a finer crowd, and few, if any, a larger one. Why is not the plan a good one for some of our wide-awake commissioners to follow?"

* * *

The U. S. Senate as Critic.

The committee from the United States senate, appointed to investigate the schools of Washington, D. C., has decided that there was a lack of unity in the system and that thoroughness was sacrificed to quantity. If the finding of the committee reflects any discredit upon the schools of Washington city it is chiefly due to the accident that these particular schools happen to be located on government territory. Similar results would likely follow similar tests in almost any city of the union. The committee substantially says that the course of study is overcrowded, that there is neither time nor room for concentration, and that we are about as far as possible from the simplicity that would admit of marked perfection by the average student in any one branch. All of which is precisely what the best educators everywhere are saying. An examination in arithmetic and United States history was given to some eleven hundred pupils in the first year of the high school. The result showed an average of about 59 per cent. in arithmetic and about 51 per cent. in history. The questions were simple and the examination was fair, as far as any examination can be so. The fact is, no examinations can be a fair and conclusive test of capacity, and one given for a special purpose, like this, would hardly make an average showing. But after all, an average grade of 59 per cent. made by a class of eleven hundred, the weak with the strong, is not bad. It is just possible that the distinguished senate itself under an examination in history might not make an average so very much higher than did these pupils. It is true, however, that the ideal course of study has not yet been found. The course at Washington may be in great need of revision, but so it is in many other places; and the investigation will not be barren of good results both in that city and elsewhere. It brings before us with new force the questions of *what*, *when*, and *how much?*

* * *

Brief Items Of Current News.

With the arrival of Lord Roberts and the British army at Pretoria the Boer war is hoped to be practically over, though the small remaining Boer force has retired with its equipment to the mountains. The *New England Journal* well observes, "there is not much glory at the best in crushing an enemy so vastly inferior in strength; but Lord Roberts has shown a generalship which would be formidable even against a foe more evenly matched."

* * *

Dr. J. H. Hollander, for years a professor in Johns Hopkins university, and a broad student of finance, has been appointed treasurer of Porto Rico. John R. Garrison is made auditor of the island.

* * *

China has suddenly become the center of interest for the whole world. Some time ago, it may be remembered, the empire seemed to be on the threshold of a great civil and commercial development. The young emperor appeared to favor progress and reform. A sudden check to this tendency accompanied the disappearance of

the emperor and the dowager empress usurped the throne. Since then there has been more or less opposition to foreign influence, though there was no violent expression of it until an organization called the "Boxers" began a series of attacks upon missionaries, their native converts, and foreigners generally. An immediate protest from the powers called out a promise from the dowager empress that she would at once suppress the attacks and punish the offenders. The failure of the national troops to do this has aroused a suspicion that the lawlessness is at least approved if not authorized by the throne. Meantime the emperor, who is found to have been kept a prisoner, has asked the powers to restore him to the throne and form a protectorate. The situation is very critical. Not only is there danger of the dismemberment of China, but any attempt at partition is likely to involve the powers of Europe, Japan, and even perhaps the United States in serious entanglement. The society of the Boxers appears to have thousands of members who have gradually become trained and armed, under the guise of athletic associations.

* * *

Congress adjourned June 7 without final action on the Nicaraugua canal bill, the Pacific cable bill, or the constitutional amendment to elect senators by direct vote of the people. The most important legislation of the session is that giving government to Porto Rico and Hawaii.

* * *

Dora M. Townsend, of the Newburg high school, wins the first prize of $100, offered by the *Chautauquan* for the best answer to the question, "What is the most dramatic incident in American history, and why?" Her answer was "The treason of Benedict Arnold."

* * *

Commercial Courses. It is interesting to notice the growing popularity of commercial courses in the large cities of the union. This follows naturally as a result of the feeling that education should be more popular, or that there should at least be the opportunity for those students who wish to prepare directly for business. The commercial schools are doing better business than ever before, notwithstanding the extra provision made in many public schools. Mr. Miles O'Brien, the new president of the board of education in New York city declares that it is a prime necessity to prepare properly a class of young men whose interests and tastes lead them into commercial life. And now Columbia university is planning for a course in commerce soon as a special fund for its permanent endowment can be secured. This course is to have the endorsement and cooperation of the New York chamber of commerce, and will doubtless be very popular.

* * *

Puerto or Porto? The vacillation over the spelling of the name of our new West Indian colony may now be considered past. A self-constituted board, composed of representatives from the Geographical Survey, the Land Office, the Post Office and the Navy, and devoted to the determining of the best methods of spelling, decided some time ago that we should spell it "Puerto" for the reason that the natives so spelled it, and that "Porto" was not good Spanish. While this board acts without any delegated authority its judgment is considered good. Accordingly, when the bill providing for the government of the island was introduced into the lower house the spelling "Puerto" was used, as recommended by the board. When the bill reached the senate the spelling was changed to "Porto." It was so accepted by the lower house and signed by the president. Then the spelling board, mentioned above, accepted "Porto Rico" as the official spelling. There is no doubt that this is easier for our English organs of speech.

* * *

Chicago will not Manufacture Text-Books. It is a wise decision that was reached by the committee appointed to ask if Chicago might not profitably go into the business of making her own school books. The report does not give the reasons upon which the conclusion is based. Perhaps the committee learned something about the unhappy experiment in California. There is no doubt that something might be saved in a state or even in a great city like Chicago by its own manufacture of text-books *if* the plant could be established and run always and only in the interest of the schools; *if* the same ceaseless care to get the best could be exercised as is necessary now to competing publishers. But there's the rub. The committee wisely recommends that the superintendents and supervisors formulate some plan to secure more intelligent selection. The recommendation to place the distribution of books in the hands of the board, thus saving profits to dealers, is a good one, provided, again, that the trust be honestly administered.

* * *

Cuban Teachers at Harvard. It is possible to add somewhat to the paragraph in the May EDUCATOR regarding the visit of Cuban teachers. There are to be about 1500, they are to be carried to Bos-

ton and back, free of expense, by United States transports, and will reach Cambridge about July 1. The course of instruction will include the English language, American history with special reference to the history of the Spanish colonies in America, physical geography, and some instruction in kindergarten methods. Not only for the tuition but for the whole care and entertainment during six and a half weeks Harvard university becomes responsible. This is magnificent. There are to be frequent excursions to places in and near Boston, and at the close of the summer school, trips to New York, Niagara, Chicago and Washington. It is hoped and expected that the influence of American life and institutions upon this band of teachers will become good seed in a thousand or more Cuban villages. Governor-General Wood approves heartily of the experiment.

* * *

The Michigan Moderator Strikes From the Shoulder. With characteristic vigor Mr. Pattengill denounces the men who have betrayed their trusts in Cuba. "The Cuban postal scandals should be used by every teacher as a text for teaching true patriotism. Let these renegade Americans be condemned and denounced as completely as a Benedict Arnold. By their duplicity and stealings, their dishonesty and disloyalty, they have brought reproach upon our flag and shame to our name. This, too, at a time when it means much to America. The discredit to our honesty and decency makes us the laughing stock of the world. These traitors swap the fair name of their native land for a mess of pottage. Let the miserable thieves be punished promptly and to the fullest limit of the law, and when sentence has been passed upon them let their names be forever held in contempt by every true lover of his country. Teach pupils that true patriotism calls on us to live as well as die for our country." We feel that the robe of charity should never be laid aside. Pity, perhaps, best becomes us here; but we heartily agree with *The Moderator* that the teacher can not strive too earnestly nor too persistently to instill the great principles of truth and integrity. These are indeed the essence of the best patriotism.

* * *

History Teachers in Session. About thirty of the enthusiastic teachers of history in Indiana attended the annual meeting of their section of the state association at Indianapolis, June 15 and 16. The program was an interesting and profitable one, a good deal of time being devoted to a consideration of the Report of the Committee of Seven. One of the papers, that by Miss Blaich, is printed in this issue of THE EDUCATOR. Those by Professor Ogg, Miss Messmore, Superintendent Hendricks and others are equally worthy of publication had we the room. The informal discussions following the papers were especially interesting and vigorous. It must be a matter of regret that the attendance could not have been larger. More history teachers should have been there, and it seems to us that all interested in the place of history in a course of study would have found the meeting very profitable. Among the papers showing a good deal of study and care in preparation was that by Fred Austin Ogg who has been occupied for several months past collecting data from schools all over the state that would show the present status of teaching history in our high schools. He finds that only a small proportion of those thus engaged are *specially* prepared as history teachers In addition to this he finds at least four other weak points: (1) Lack of library facilities, (2) prevalence of courses not more than one year long, (3) tendency to maintain courses of doubtful propriety, (4) lack of appreciation of the value of history.

* * *

The Recommendation Nuisance.

The whole system of testimonial letters bearing witness in general terms to the good character, the qualifications, or the accomplishments of the bearer, addressed, most likely, To Anybody At All, has about it several things that should heartily commend it to perpetual oblivion. Among these is the influence upon the individual asking to be commended. The prevalence of the custom has blunted the fine sense of delicacy which we should all feel about asking our teachers, our pastors, our friends generally to vouch for us. Being honest with ourselves we all recognize our own weak points and must admit that our friends who know us well enough to speak of us recognize them too. But a request for a letter of recommendation means the enumeration of our strong qualities without any reference to the weak ones. We say draw me my picture that those who desire to know me may see; but leave out the hard lines, tone down the irregularities, modify the abnormal features, give me a face of strength and beauty. So much is implied, at least; and many a man who is asked to commend another is placed in the very embarrassing position of either

saying what would be anything but commendatory or else drawing an idealized picture that would not represent the candidate fairly at all. Who can blame one at such times for sliding out of the predicament by saying nothing, or, what is equivalent, by writing a lot of generalities which may apply to almost any decent person, and may mean anything or nothing. That makes the results either meaningless or misleading. Experienced boards and trustees double discount the statements, while the inexperienced are deceived until they learn better.

As a consequence, even letters that are written in greatest sincerity and that are richly deserved suffer depreciation together with the mass that may be lacking in both sincerity and desert. *The Outlook* for June 9 mentions the "lack of a sense of responsibility for personal indorsements which is one of the weaknesses of many estimable men. It is a subject of cynical humor that any man can secure any kind of an indorsement he wishes." Similarly Dr. Andrew S. Draper writes, in the June *Educational Review*, "It is safe to say that the custom of writing meaningless letters which reveal but part of the truth, to say nothing of such as propagate untruth, is to be condemned." The gradually changing conditions which are leading the people to demand even for the common schools the best available men and women with the spirit and training of the true teacher, and which will thus apply the principle of the place seeking the man, may be expected to modify the scramble for positions somewhat. Already the search for wholly capable teachers is sharp and close.

May we not then commend the good qualities of our worthy friends and use our influence in their behalf? By all means. May not an institution seek the welfare of its graduates by trying to place them in desirable positions? Assuredly it may and should. But suppose professors and pastors and friends would say when asked to recommend a teacher for a place,—"You may use my name as a reference; your board of education may ask me what they wish to know about you and I shall answer them truthfully, to the best of my knowledge." Would not information and testimonials thus given have greater credence and hence be of more service? When an institution desires to aid one of its graduates to a position, suppose that instead of having the president, vice-president and several professors write personal letters of the stereotyped kind, the faculty as a body should consider the candidate and his fitness for the place, and report officially with its conclusion to the board requiring the information. Would not the chances of satisfaction to all concerned be greatly increased? The ideal course to be taken by a teacher already at work is to strive daily to be worthy of a better place, and then be content where he is until the call comes. When the way to the better place opens and we inform our friends they will be free to help us, according to their means, and commendation thus offered is likely to be taken at more nearly its face value.

* * *

Everyday Honesty.

It is not easy, even for the most optimistic of us, to get away from the conviction that we rate too low the plain principles of honesty and truth in everyday life. It happens just now that we have two or three instances of breach of trust in public life so flagrant that the public press is unsparing in its denunciation of the faithless officials. The controller of New York city, Mr. Bird S. Coler, addressing the students of Illinois university the other day used language so emphatic as to create a sensation: "Corruption in state and municipal governments has too long been accepted in this country as a matter of course. There has been a growing tendency among men who are otherwise good citizens to shirk public duties. They want to keep out of politics and public life, but in keeping out they made room in both places for men who ought to be in jail." It is to be expected that we stand aghast when a man or a group of men to whom the people have committed the administration of large interests prove recreant to their trusts; but the petty deceits and irregularities that we see practiced daily, that we suffer from daily, so common that we have come to regard them as something to be tolerated almost without protest—what about these?

To show exactly what is meant, here are a very few cases which will sound only too familiar as they are read: A man lately went into a furniture store to buy a chiffonier, and a young saleswoman, indicating some pieces made of ash and chestnut, began fluently "here is something at sixteen dollars in solid oak; here is something at

eighteen dollars, solid oak, swell front, French plate glass; here is an elegant—" But the prospective purchaser happened to know something of the kinds of wood, so with a quiet remark that he would not purchase just then he walked pitifully out while the innocent saleswoman resumed her novel. Who was to blame for these lies, repeated, perhaps, so often that she does not give them a second thought, says her prayers at night, and sleeps the sleep of the just. It is even probable that she really does not know oak from chestnut, though the same degree of charity can not be applied to many similar instances. A man went to buy a pair of tan shoes. He found a pair a little too snug, as sometimes happens, and asked for a wider pair. The clerk with a frankness that was commendable, agreed with his customer, explaining that this particular kind of leather would not stretch. When the wider last was not found, and the proprietor was called to know how long it would take to order the desired size he assured the buyer that there was ample room in the pair at hand—all they needed was a little stretching! A member of congress, who is also a bank president, a man of large interest and wide influence, when charged with failure to keep faith in certain political matters expressed indignant surprise, and said "can't a man lie a little in politics if he wants to?" And so we find it everywhere, in business, in politics, in society, the standard of truth is at half-mast. Examples are only too common, The cry of Dr. Holland for "men whom the spoils of office cannot buy, . . . men who have honor, men who will not lie, . . . tall men, sun-crowned, who live above the fog in public duty and in private thinking," might even yet be justified.

Does it not seem that almost the only hope lies in a perennial, persistent, emphatic advocacy of truth in every schoolroom in the land? We believe that children should be shown the fearful prevalence of petty deceit. And let us not be over-careful to leave it in the vague and abstract form. Let us insist that a misrepresentation of goods is lying for which either the clerk or the proprietor, or both are responsible; that to use a sample which does not truly represent the article to be sold is to practice fraud; that to give scant measure or scant weight is stealing; that to promise the delivery or the completion of a piece of work earlier than it may reasonably be expected, thus securing the order above a competitor, is dishonest. Yet all these things are practiced daily. We are all victims of the deceit. Perhaps we are ourselves excusing the "tricks of trade" as a last resort in making a living. "Shall we always live at this poor dying rate?" The condition is deplorable. It calls aloud for better things, and the teacher must lead the way.

WEATHER PROVERBS.

By DR. J. T. SCOVELL.

"WHEN it is evening ye say, it will be fair weather; for the sky is red. And in the morning, it will be foul weather today; for the sky is red." Matthew 16–2, 3. Winds, temperature and rainfall, clouds and dew, fogs and frosts with other atmospheric phenomena constitute what we know as the weather or climate. Climate has been active in the formation of mountains, plateaus and plains. It has had much to do with the formation and fertility of the soil; it determines the character and distribution of plants, animals and men; climate also determines the habits, industries and institutions of mankind. The importance of climate has always been recognized. The sun, the source of light and heat, has been the chief or an important deity among most of the races of men; while the winds, the clouds and the rain have been considered beneficent deities by many primitive people. The fishermen and hunters, the herdsmen, farmers and sailors furnish mankind with food and all the necessaries of life. They are specially dependent upon the weather. As classes, these people have always observed weather phenomena carefully, have always been weather prophets. Weather

proverbs present in crystallized form many of the conclusions of these unlettered observors.

These proverbs constituted about all there was of meteorology down to the opening of the seventeenth century. The invention of the thermometer about 1611 and of the barometer about 1643, made possible more definite ideas of changes of temperature and of changes in atmospheric pressures. In 1747 Benjamin Franklin discovered that at least some of the storms of North America were rotary and moved northeasterly. The introduction of the telegraph made it possible to warn shipping centers of approaching storms, thus preventing much loss and damage. The value of such weather predictions became so manifest that about 1870 the government Weather Bureau was established. To-day there are about 200 Weather Bureau stations distributed over the United States. Each is equipped with automatic instruments that measure and transcribe for each moment of time, the temperature, the air pressure, the velocity and direction of the wind, the beginning and ending of rainfall, the amount of precipitation and the prevalence of sunshine and clouds. These stations are in charge of trained observers who report twice daily, by telegraph to the central office in Washington D. C., observations taken simultaneously. From these reports charts are made so that within an hour the trained forecaster has before him a panoramic view of the atmospheric conditions over the whole country. Such opportunities for studying the weather are almost ideal. A brief account of what has been learned about the weather may help us to understand and criticize weather proverbs.

There is a general circulation of air between the polar and equatorial regions. North of the equator there are many irregular winds, but in the north torrid zone the prevailing winds are northeasterly, while in the north temperate zone the prevailing winds are southwesterly. The atmosphere seems to be divided into high and low pressure areas which follow one another eastward across the country at intervals of about three days. The low or light pressure areas, with inflowing winds and cloudy skies, are the storms that bring us rain. They are called cyclonic areas, as the winds generally take a spiral direction in a course opposite to that of the hands of a watch. These areas are somewhat elliptical in form, the longer diameter usually trending a little north of east. They vary in size from less than 100 miles to more than 1000 miles in diameter.

About four-sevenths of these low pressure areas develop over the north plateau region of the Rocky Mountains and move eastward across the Great Lakes and down the St. Lawrence valley, distributing a scanty rainfall. The other three-sevenths are developed over the southwestern arid region, and move northeasterly up the Ohio and down the St. Lawrence valleys, distributing abundance of rainfall. During the passing of a cyclonic area, the weather phenomena of a given locality will vary with its relation to the storm center.

As the storm area approaches, the air, especially in spring, is often very clear so that the stars seem numerous and bright; then the mercury falls and the lighter air transmits sound very freely; then easterly winds arise and halos form around the sun and moon; then cirri clouds appear, and places north of the path of the storm center have northerly winds, cooler weather with showers or squalls; while on the south there will be southerly winds, higher temperature, cirro-stratus clouds, nimbus or rain clouds and probably heavy rain. After a time the winds become westerly, the clouds break up, the rain ceases, and clear skies, with perhaps cumulus clouds, appear. By carefully noting the winds of a cyclonic area one may determine the position of the storm center and form some intelligent idea of the weather phenomena that may be expected to follow. For unexplained reasons the activity of the forces in a storm area may diminish or increase, or the storm may diverge from the ordinary course, so that there is always doubt as to the nature and course of a storm. The cyclonic areas are followed in about three days, by high pressure areas with outflowing winds, clear sky and lower temperature. They are developed in the northwest and by a vortical action draw down cold air not from the polar regions but from great altitudes, and sometimes this action becomes strong enough to form a cold wave. Many of these areas move eastward, while some move southeasterly and then northeasterly. These high and low pressure areas move at the rate of about 600 miles per day. These storms and cold waves have great horizontal extent, but they are

simply great whirls or eddies in the lower stratum of the atmosphere, probably not more than five miles in thickness.

Tornadoes are the most violent storms we have. They have a diameter of from 500 to 1,000 yards and rotate with inconceivable rapidity. They usually occur in the southeast quarter of a cyclone area, in the afternoon or evening, between March 15 and June 15, and are more frequent in the central valleys of the United States.

Hurricanes arise in the West Indies, move northwestward to the Gulf coast of the United States, then turn northeasterly toward the Gulf of St. Lawrence. They have a diameter of from 200 to 500 miles, being much smaller than the average cyclonic storm, but they are much more violent and destructive.

During droughts the low pressure areas develop in the north, and the drought is broken when the "lows" begin to develop in the south. Sometimes in summer there comes a stagnation of the easterly drift of atmospheric phenomena. Then if there is a high pressure area in the southeast and a low pressure area in the northwest the warm air moving northward casues a hot wave that sometimes becomes very oppressive. We know but little about the causes that lead to the development of these different storms. We simply know something about the phenomena that attend their progress across our country. And amid the most common phenomena unexplained exceptions continually occur. With all our delicate instruments, with all our opportunities for study, with all that we really know about weather phenomena, we have advanced but little beyond the empirical stage in weather forecasting.

The trained forecaster, with a panoramic view of the weather changes for the whole country before him can follow weather phenomena much as a train dispatcher follows his trains, and is able to foretell weather changes one or two days in advance with considerable accuracy. No local observer, whether depending upon natural phenomena or instrumental readings, could do nearly as well.

Professor Willis L. Moore, chief of the weather bureau, thinks it impossible, at the present time, to make a forecast of the weather, on scientific principles, for a greater period than two or three days.

The progress made in the study of weather phenomena has increased rather than diminished faith in the natural indications of changes in the weather. Realizing their value, the government has made a collection of weather proverbs from all parts of the world. There are many hundreds of them. Some are scientific and trustworthy. Some others seem trustworthy but are not easily explained. Many are contradictory, some are local, but most of the better ones are universal; many oft repeated are not verified by careful observations; others seem fanciful or foolish, but all are interesting and worthy of study.

Careful observations of winds, clouds, halos, and other natural phenomena will enable one to foretell local weather changes as accurately as the man who depends entirely upon instrumental observations.

WEATHER SIGNS

"The sun is bright, the sky is clear.
But grandma says a storm is near;
And when I asked how she could know,
She said the peacock told her so,
When, perching on the old fence rail,
He screamed so loud and dropped his tail;
And the shy cuckoo on the wing
Repeated over the same thing;
And "More wet!" all the Bob Whites cried,
That in the grassy meadows hide;
The soot that from the chimney fell,
Came down, it seems, this news to tell;
The kettle sang the self-same tune
When it boiled dry so very soon;
The grass, this morning, said so, too,
That hung without a drop of dew;
And the blue swallows, flying low
Across the river, to and fro.
So all these told her very plain
That ere the evening it would rain;
But who told them, and when, and how?
That's what I want to find out now."

[A second paper on this subject will appear in the August issue.]

Four things a man must learn to do
If he would make his record true.
To think without confusion, clearly,
To love his fellow man, sincerely;
To act from honest motives, clearly;
To trust his God, and heaven, sincerely.

—*Henry Van Dyke.*

THE CHILD AND THE SCHOOL.

VIEWS OF REPRESENTATIVE MEN.—V.



COLONEL FRANCIS W. PARKER, *President Chicago Institute.*

THE school should be made a joyful place. A child should have one life, wholesome and complete, and the home life and the school life should each supplement the other. Let the systematic cultivation of selfishness by bribery—per cents, material rewards and prizes, be banished. Let the child feel that he has something to do for himself, that he is a member of society with the responsibilities that accompany such an important position. The first thing that we want for our children is that they shall have robust, vigorous and healthy bodies; then that they shall be helpful, trustworthy, cheerful and possessed of good taste, that they shall find the particular work into which they can put all their energies and feel that their life is for the good of others, and above all that they shall become good citizens. A citizen is one who makes the highest thing in all the world his ideal, while the essential in vocation is the quality of work done, the highest inspiration to quality being helpfulness. The future demands an education into free government, a strictly American education to meet the demands of these times and the ever increasing duties of citizenship.

FRANCIS W. PARKER.

DEMORALIZING PUBLICATIONS.

By CHARLES SWAIN THOMAS.

EVERYONE interested in educational work is already convinced of the potent influence of demoralizing publications; it is consequently unnecessary for me in a series of platitudes to repeat the traditions of the church and school, and all moral agencies, unless this repetition, or this possible redressing of old thoughts bring to you directly or indirectly a realization of the teacher's personal duty—an earnest desire to do quietly and unobtrusively a little work that will aid in driving out bad books with good books.

This work, like all humanitarian efforts, is most effective with children during the early formative period of their lives. Proper direction here is a safeguard against the development of a vicious taste.

"But what is proper direction?" inquires an anxious mother. For an answer, let me plead on behalf of the child for those old fairy stories—*Red Riding Hood*, *Babes in the Woods*, *Bluebeard*, *Jack and the Bean Stalk*, *Beauty and the Beast*—all of "Hans Andersen" and "Mother Goose." In entering this plea I am well aware that I am opposing some excellent, over-cautious, hypercritical mothers and fathers whose tender solicitude has made them look askance upon all this sort of juvenile fiction. *Red Riding Hood* and *Bluebeard* are rejected because of their gore and bloodthirstiness, and *The Babes in the Woods* because of its dreadful melancholy. Does the over-cautious parent believe he can keep his innocent child from harm by keeping him in ignorance of the world's cruelty? Long before this parent suspects it, his child has learned from his nurse or his little companions something of the evil about him, and most likely it is evil in its attractive form. Now the evil in fairy stories is always presented as a thing to be shunned. Childish sympathy has never been known to go out toward the cruel uncle, but it has wept many tears over the little orphans clasped in each other's loving arms, thinly sheltered by the forest's leaves.

Recall for a moment your own childhood. Do you regret that you learned these stories? Did they make you cold-hearted and bloodthirsty in your desires? What was the effect upon the youthful mind of Sir Walter Scott of those old border stories of "Thomas the Rymer," the "Hardens and the Black Witches" of "Lock Awe" that his grandmother told him in his childhood? Does the story of *Old Mortality*, of *The Heart of Midlothian*, of *Ivanhoe* reflect the sentiment of a heart hardened in youth and made cruel and bloodthirsty in manhood? Did they make you feel that way when you read them? Rather your heart warmed toward those old heroes as they battled bravely for their honor, and their homes, and the principles they felt were right; and you rejoiced when Nemesis fell upon the villains whose cruelty and cupidity had inspired the struggle.

But aside from the mere moral lesson of the fairy stories, there is an intellectual consideration. The mind of the child is imaginative, and the growth of the imagination should be fostered and not dwarfed. These old stories are an inheritance from the race when it was young; when its joys, its sorrows, its emotions and its longings corresponded in part to childish nature as we find it to-day. Nourished with these, the imagination will expand and there will be a correspondent growth of the emotional nature, more virile, more healthily masculine, more admirable in every way than our modern but less natural invention.

When the child develops into the youth, the need of careful selection in reading material is even more obligatory upon the part of the parent, because one must then contend with the influence of young companions fresh from the reading of *Dare Devil Dick* and *Pretty Nell's Elopment*. Now, our healthy youth is going to read something at this period, and it is not going to be Baxter's *Saint's Rest* or Taylor's *Holy Living and Dying* either at his own or anybody else's suggestions. It is going to be romance; but with tact and wisdom, he can be made to choose healthy romance. Our Penny Dreadfuls are hurtful at this period because the hero's aim is silly or criminal, and he is never deterred for conscience' sake from the accomplishment of that aim. The young reader habitually following these false heroes naturally gets wrong ideas of life. His tastes are low, his ambitions wrongly directed, his whole youth warped by his chase after mere empty chimeras.

Again for this period of development I plead for romance—or for the historical stories full of the romantic elements. But it must be the sort of romance that inspires the youth with higher ideals of living—the sort that sent Arthur's knights on their search for the Holy Grail and made Sir Galahad successful; that sent the Grecians into Troy to reclaim their stolen Helen; that sort of romance which inspires love for honor, homes, virtue and God, and fills men "with the stuff that heroes are made of."

All of you who are teachers are interested in the selection of reading matter for young children and youths for unselfish reasons. You want to do what you can to help them, and you study their natures and you try to find the sort of material that is best suited for them—the sort that will inspire them toward higher ideals of living. That task finished, you have an opportunity to choose for yourself. Of course you will read Shakespeare, and Milton, and Wordsworth and Tennyson, and Browning, and notwithstanding the traditions of some fathers you will read fiction—a good deal, perhaps. We now take it for granted that novel reading is beneficial. We have read "Dickens," and "Thackeray," and "Scott" and "George Eliot," and we have seen recorded in their pages the joys, the sorrows, the doubts, the struggles, the disappointments, the successes which we have seen partially or wholly paralleled in our own or our friends' experiences; and our sympathies have been broadened, and our understandings widened, and our charity for human frailty has increased. When personal temptations have come to us, we have remembered, along with the moral lessons taught under the guardianship of the church, the terrible anguish which a Steerforth has entailed, or a Hester Prynne has suffered. The life of Fagin the Jew and Pere Grandet has warned us from the path of cupidity, and the moral virility of Adam Bede has taught us loyalty to truth as we have seen it revealed.

Lately, however, there has come into popularity a class of novels which, it seems to me, deserves unqualified rebuke. When a writer like Grant Allen makes a traversty of the marriage relation, robs it of its sacred purity and holds up to public scorn the virtue which the traditions of 6,000 years have ennobled, when Thomas Hardy in *Jude the Obscure* revels in a lasciviousness which the Harpers are afraid to print in their magazine but publish boldly in book form—when all this is done, every teacher and every parent, for the sake of righteousness and a social purity should join in the denunciation which reputable reviewers have already started.

A teacher should be glad to be called puritanic when it comes to such matters as this. To the plea of Millet and Whitman, and Tolstoi that anything in nature is in the province of art, he can reply that as long as the lily grows in the pond he prefers to linger and look at the pure white flower, the type of innocence, rather than dip his hands in the slimy scum that floats near it. We have sheltered ourselves long enough beneath the oft-quoted aphorism "To the pure all things are pure." We shall not, like Borromeo, walk with downcast eyes lest we shall see a woman, or be like Plotinus who was ashamed of his own body. We can, however, like the Rev. James Martineau, preach a sermon on "The Realm of Silence," and not like Walt Whitman, in the *Leaves of Grass*, or Swinburn, in *Laus Veneris*, make a plaything of voluptuousness.

We can, of course, go too far. I could never sympathize with the carping criticism against *The Scarlet Letter*, for I know of nothing in literature which pleads more earnestly or more eloquently for purity. I have read somewhere of a nude marble statue frequently reduced in bronze which represents a youth standing upright in the attitude of prayer, with head erect, countenance turned heavenward, hands clasped. A very devout old lady could see in this nothing but a vulgar suggestiveness and put it on the top shelf in a dark closet, but a good, pure-minded clergyman for years kept it on his study table where it was constantly a source of inspiration, helping him day by day toward a deeper faith and a higher trustfulness. If some see grossness in Venus de Milos, I am happy to say that for me the statue breathes a holier purity than any piece of statuary it has been my privilege to see.

Where then shall we make the distinction between the moral and the immoral in art? To me it seems to lie in its suggestiveness. If the artist's aim is pure, purity will be the lesson taught; if it is impure in its suggestiveness, morals have been sacrificed and the artist's work will lack permanency.

And this is the hopeful condition in the whole discussion—*art with immoral suggestiveness does not endure.*.

When we have said all this the practical question naturally arises, What are we going to do about it? And in our answer we must refrain from beautiful theorizing; we must try to understand existing conditions, particularly the extent of human frailty.

In September, 1893, an international convention met in Switzerland to devise means for the suppression of all literature tending to degrade public morals. Enthusiasm for their cause was commendatory, but practical results were sacrificed because of the radical spirit of some of the delegates. One member, for instance, seriously proposed that authors of immoral books be seized bodily and be made to erase their offensive writings with their own tongues. Another suggested that editors of reputable newspapers should agree to exclude from their associations any fellow-member who disgraced, forgetting the practical difficulties of executing such a scheme. Another pleaded for legislation, but legislation to be effective must be supported by public sentiment. Our laws are good enough as they are. I am even convinced that their enforcement is oftentimes detrimental to public morality, as was illustrated several years ago when Mr. Wanamaker decreed that Tolstoi's *Kreutzer Sonata* should not be carried in the United States mail.

The evil, like the evil of intemperance, is never going to pass out of our midst. We must content ourselves with earnest and prayerful endeavors to minimize it. The public schools, by their wise selections of supplementary reading matter, are now our most effective agencies. Sabbath schools are doing something, but the average Sunday school story is a weak, inane, unnatural sort of thing that has little attraction for a healthy, vigorous youth. In our individual spheres we can do a great deal to see that unfortunate children are provided with good reading material, but we must not rest content when we have provided this literature —we must encourage the child to read it, and help him toward an appreciation of its beauty and truth. This course continued with the old children, will inevitably bring about good results.

To that class who have already grown mature, who have formed their tastes, little can be done. We can, however, by being honest with ourselves, by speaking boldly, fearlessly and without cavil, do much toward creating a healthy public sentiment. If a certain literary cult goes wild over *The Great God Pan*, *The Parasite*, or *The Woman Who Did*, we need not follow them in their blindness, but true to that sense of purity which public morality has always taught, true to the principles of the Old Testament, beautifully reinforced by the new dispensation, we can utter against such publications earnest protestation or stinging rebuke.

The province of literature is a noble one. From the time of Beowulf, our Anglo-Saxon Epic, to Tennyson and Browning and Ruskin and Kipling, we have received the accumulated heritage of eighteen hundred years. Shall we be false to the traditions of the best of these masters, spurn their memory, and go searching for false gods? Shakespeare is speaking to us as powerfully as he spoke three hundred years ago. We have Spenser, and Milton, and Wordsworth, and Coleridge, and Lowell, and Longfellow, and Whittier, and scores of others just as pure, Shall we forsake these and kneel to receive the empty benediction of Arthur Machan and Grant Allen and Sarah Grand? The mere juxtaposition of names suggests your answer. The French proverb *L'Art pour Art* —art for art's sake—will not excuse them. Let us cling to the literature of the right sort. It has led us away from the sordidness of every-day existence, out into the fresh, clear, morning air, redolent of joy and song, down into the shaded valley whose very solitude has suggested the presence of God, back into thoroughfares where it has communicated its message of love. Its sentiments have been to us a constant encouragement, warning us from temptation and inspiring us toward an ideal whose dominant spirit has been purity in thought and deed.

There is no emotion of the human heart that poetry has not touched—the playfulness of childhood, the ambitions of youth, courtship and love and motherhood—all these have been its sacred themes. To the mother sorrowing for her innocent baby's death, it has been a gentle comforter; to the erring heart of young manhood and young womanhood it has spoken words of warning; to the old gray-headed man approaching his decline, it has breathed hopeful, loving words. You rise from the reading of such themes as these, strengthened, purified and ennobled. How different is the influence of Thomas Hardy, whose favorite theme is wantonness? He creates a fetid

atmosphere in which his characters move, and when you make your exit you feel that you have touched that defiling pitch which Falstaff describes to Prince Hal. Shame be on those who have traduced our language and made it the minister of grosser passions, and equal shame on those who find pleasure in such writing. With a mass of good shall the good not be encouraged?

CENTRE COLLEGE.

SOME REASONS FOR STUDYING THE BIBLE.

By PRESIDENT W. W. PARSONS.

IN trying to present something in the nature of an argument for the study of the Bible, I must ask you to bear in mind that there are two great types of Bible study. Perhaps these might be named, respectively, the theological and the literary study of the Bible. And as I am thinking of the subject, these differ not so much in the subject-matter of study and attention, as in the presupposition in the student's mind as to the nature and authority of the book itself. But this difference is fundamental. One attitude and supposition is that the Bible is a divinely-inspired, wholly inerrant and absolutely authoritative book. The other regards the Bible as a purely human product, as having the imperfections of all human productions, and as having only such authority over the thought, conscience and will of mankind as its inherent truth and reasonableness give it. Of course, I understand that these are the two extreme views, and that between these two there are numerous conceptions of the Bible embracing only certain elements of the one or the other or of both. It is for a purpose that I set out in strong contrast these two radically different views.

From my earliest childhood I was led to regard the Bible as something more than mere literature and history. I was taught to believe that this book is in a peculiar sense a revelation to mankind of God's infinite thought and will upon subjects of deep and eternal interest to every human being. This attitude remains with me to this hour. While I could not construct an argument in support of this thesis, I am bound to say that my study of the Bible and my reading and reflection have only deepened through the years these earliest impressions, and I can now but regard this volume as in some extraordinary and perhaps inexplicable way a divine message to the human race.

But I wish to cultivate the largest and most liberal respect for all differing and opposing views upon this and every other subject. Many scholarly, able, sincere men and women hold to what I have termed the literary view of the Bible. Doubtless there are those who, under this or that influence and for what seem to them valid reasons, have adopted this point of view from which to regard the Bible. It is this class that I especially wish to address.

The person who regards the Bible as the word of God, or even as containing an authoritative revelation of God's infinite thought, will and purposes, finds in this fact alone a sufficient warrant for his study of the book. But to him who has been led to think of it as a purely human product, it may seem to have no unusual claims to attention and study. To my best thinking, regarded even as a purely human work, no other book has equal claims upon the thought and attention of mankind. For the sake of the argument, then, and that I may stand on a common platform for the time with those who consider this book a human production simply, let the contention be granted that the Bible is to be considered, studied, tested, just as any and all other books. What sound argument can be advanced in support of the claim that the Bible deserves the attention and consideration of every young man and woman? With little discussion of them, I offer five such reasons for you to consider.

I. A MODEL OF RHETORICAL EXCELLENCE.

No other literature, it seems to me, would be so valuable a means of general language and rhetorical culture. As a means of acquiring a large, rich, expressive and precise vocabulary; a simple, strong, well-balanced sentence structure; a chaste, beautiful, expressive imagery—all the rhetorical and linguistic excellences—I know of no literature equal to the Bible. Perhaps this is the least important reason that could be advanced for studying the sixty-seven books that constitute this library of literature. But it is a reason not without weight. To ac-

quire a liberal mastery of a universal instrument of expression and of communication among mankind is no small achievement, and any true means for accomplishing this is entitled to the student's consideration. That thoughtful Bible reading and study contributes to this end is the testimony and experience of too many of the masters of expression to be lightly put aside.

TESTIMONY OF EMINENT MEN.

Probably no other English writer has been so profoundly impressed and moulded by the Bible both as to the subject-matter and the form of his literary products as John Bunyan. The *Pilgrim's Progress* "stands unrivaled as a model of our English speech, plain, but never vulgar, full of metaphor, but never obscure, always intelligible, always forcible, going straight to the point in the fewest, simplest words." Bunyan's style is recommended by Lord Macaulay as an invaluable study to every person who wishes to gain a wide command over the English language. Its vocabulary is the vocabulary of the common people. Whole pages of it contain not a single word of more than two syllables. Bunyan's English was the English of the Bible. By constant perusal his mind was thoroughly steeped in Holy Scripture; he thought its thought, spoke its words, adopted its images.

Matthew Arnold bears similar testimony to the influence of his early study of the Bible upon his style of literary expression; and John Ruskin attributes his peculiarly charming style to his close and daily study of the Bible in childhood.

Says Professor Huxley: "For three centuries this book has been woven into the life of all that is best and noblest in English history. It is written in the noblest and purest English, and abounds in exquisite beauties of a merely literary form."

Daniel Webster, when complimented upon the purity and magnificence of his language, said: "From the time at my mother's knee I first began to lisp verses from the sacred writings they have been my daily study and vigilant contemplation. If there be anything in my style and thoughts to be commended, the credit is due to my kind parents in instilling into my mind an early love for the Scriptures."

Addison and Edmund Burke both attribute their excellences and power of expression to their early and constant study of the Bible.

LINCOLN'S PURE ENGLISH.

Abraham Lincoln as a boy and as a young man had only a few books. He read Bunyan's *Pilgrim's Progress*, Shakespeare, the Bible and a few others; but he read them well, and I do not know of a better example in all history and literature of the influence of early reading and study upon a man's whole style of utterance than is furnished by the case of Abraham Lincoln.

It would surely be difficult to find in English literature two better specimens of pure, simple, noble English expression than are furnished by Mr. Lincoln's address at the dedication of the Gettysburg National Cemetery, November 19, 1863, and his letter of condolence addressed to Mrs. Bixby, of Boston, the mother of five sons who were killed in battle in defense of the Union cause. The Gettysburg speech is an English classic of the highest type, but I need not repeat it. To mention it is to call it vividly before the mind of every English reader.

The letter referred to has been engrossed, framed and hung in one of the Oxford (England) university halls as a specimen of the purest English and the most elegant diction extant:

"Dear Madam:—I have been shown in the files of the war department a statement of the adjutant-general of Massachusetts, that you are the mother of five sons who have died gloriously on the battle field. I feel how weak and fruitless must be any words of mine which should attempt to beguile you from the grief of a loss so overwhelming.

"But I cannot refrain from tendering to you the consolation that may be found in the thanks of the republic they died to save. I pray that our Heavenly Father may assuage the anguish of your bereavement, and leave you only the cherished memory of the loved and lost, and the solemn pride that must be yours to have laid so costly a sacrifice upon the altar of freedom.

Very respectfully yours,

ABRAHAM LINCOLN."

As a specimen of simple, pure, elegant English, as well for its value as revealing the breadth and depth of Mr. Lincoln's sympathies—the great heart and soul of the man himself—this letter might well be engrossed, framed and hung on the walls of every public school room in the land.

Every person is greatly influenced in the adoption of his vocabulary, in his sentence structure, and in his style of utterance generally, by the literature which he reads and dwells upon in youth; and it is impossible not to believe that the literary excellence of these masters of English and of scores of others that might be mentioned, were due in a large degree to their early, intelligent and constant study of the Bible.

II. THE BIBLE IN LITERATURE.

A knowledge of the Bible is essential to the best understanding of the world's great literature. Great English literature is full of quotations, allusions, references, etc., to the Scriptures. From Chaucer down to the writers of the present day this is true. Chaucer, Spenser, Milton, Shakespeare, Wordsworth, Tennyson and all the lesser writers have drawn heavily and constantly upon the Scriptures in the creation of their literary products.

I could easily bring before you quotations from all classes of writers—poets, essayists, novelists, dramatists, statesmen and orators—to show their constant references and allusions to and their frequent quotations from the Bible. I must content myself with two or three.

Said Mr. Lincoln in his second inaugural: "It may seem strange that any man should dare to ask a just God's assistance in wringing their bread from the sweat of other men's faces; but let us judge not, that we be not judged. The prayers of both could not be answered fully. The Almighty has His own purposes."

In his *Defense of Poetry*, Shelly said: "Their errors have been weighed and found to have been dust in the balance; if their sins were as scarlet, they are now white as snow; they have been washed in the blood of the mediator and redeemer, Time. Look to your own motives, and judge not lest ye be judged."

Here are no fewer than seven Biblical sentences woven into a tissue all palpitating with generous sympathy and generous indignation.

No reader of Dickens's *Tale of Two Cities* could fail to be profoundly impressed by the delicate reference in the closing paragraphs of that story to the saddest theme of the New Testament:

"She kisses his lips; he kisses hers; they solemnly bless each other. The spare hand does not tremble as he releases it; nothing worse than a sweet, bright constancy is in the patient face. She goes next before him—is gone; the knitting women count twenty-two.

'I am the Resurrection and the Life, saith the Lord; he that believeth in me, though he were dead, yet shall he live; and whosoever liveth and believeth in me shall never die.'

The murmuring of many voices, the upturning of many faces, the pressing on of many footsteps in the outskirts of the crowd, so that it swells forward in a mass, like one of water, all flashes away. Twenty-three.

They said of him, about the city that night, that it was the peacefulest man's face ever beheld there. Many added that he looked sublime and prophetic."

What exquisite tenderness and beauty are given to the closing words of this story by this delicate and impressive use of Scripture language!

In one of his great orations, Daniel Webster, speaking of the great services of Alexander Hamilton in establishing the finances of the government upon a sound basis, said: "He smote the rock of our national resources, and abundant streams of revenue gushed forth; he touched the corpse of public credit and instantly it sprang to its feet."

What clearness, liveliness, impressiveness and force are imparted to this utterance by the use of this Scripture thought, imagery and language!

No thoughtful reader of Shakespeare's thirty-six dramas can fail to be impressed with the indebtedness to the Bible of this great writer for his thought, language and imagery. As a single example, I refer to that almost divine speech of Portia on mercy in the *Merchant of Venice*, which is hardly less than a paraphrase of the Lord's Prayer.

An understanding of Spenser, Milton, Shakespeare, Browning, Wordsworth, Tennyson and all, really involves and presupposes a familiarity not only with the language and imagery, but with the substance and thought, of the Bible.

I have given prominence to these two points or reasons, not because they are the most significant. Important as they may seem, they are entitled to less weight, in estimating the value of Bible study, than the reasons I shall now state. My reason for dwelling upon them is the hope that they may attract a degree of attention and interest which the more abstract grounds now to be offered might fail to secure. I pass to a very brief statement of each of the three remaining reasons to be given. These constitute the philosophical or moral argument which I wish to advance.

III. THE SCRIPTURAL WORLD-THEORY.

The Bible presents the truest and most satisfactory, because the most reasonable, view or explanation of the material universe. Without any argumentation on the subject, the opening sentence of the Bible propounds the most rational explanation of the origin of the material universe which man has ever been able to give himself. "In the beginning God created the heaven and the earth." I raise no question as to the method by which the world has assumed its present form, whether by omnipotent flat it sprang into being in its present form or by slow process of unfolding through infinite past ages. This is a question of method, not of beginnings.

Nor again as to the meaning of the term beginning. There are beginnings in time and there are logical beginnings. It is quite possible that this opening utterance of the Bible simply proclaims the logical necessity for mind, intelligence, spirit, personality, as the ground of the existence of the universe.

The Bible is, in its teaching, implications and thought, everywhere and throughout a theistic book. It everywhere presents a spiritual principle or personality as the basis of the universe; and to this fact more than to any and all others is due its great value in the education of mankind. Every thoughtful person frames for himself some world-theory, some explanation of the universe about him, with its law, order, coherence and beauty. And it is probably true that no other conception which enters his mind will so powerfully influence his whole inner and outward life as will this. Man tends to grow into the likeness of his God, to assimilate unto his ideals. "Be ye perfect, even as I am perfect," is the scriptural injunction.

IV. GLORIFIES MAN.

The Scriptures offer the most reasonable, the most satisfactory and the most exalted concep- of the origin, the nature and the destiny of the individual human being. According to the Bible, man is in an especial sense the child of God, made in his spiritual image. He possesses an infinite nature, has infinite possibilities and an infinite future. Such a conception exalts and ennobles life and gives duty and responsibility a dignity and significance which otherwise could not attach to them.

V. ETHICS OF THE BIBLE.

The Bible contains the noblest system of practical ethics and the most rational view of the abiding and substantial aims of human life and endeavor, to be found in literature. And this system is not utilitarian in the usual definition of the term, not the greatest theory of happiness as an end, but as an incident of right action.

There are three planes of ethical conduct, of dutiful behavior. One of these is the plane of mechanical obedience to formed requirement. One may obey a divine command, a legal requirement or any authoritative rule simply as such, and without any insight into or understanding of its meaning, without any intelligent sense of obligation. Such action is blind, unconscious, unreflecting, mechanical; and yet even this mechanical, formal obedience to moral law is infinitely better than a disregard of its restraints and commands.

A second kind of moral action is right action on the plane of duty. One sees what is due from him, and feels strongly the internal sense of obligation to act in harmony with this insight and feeling. This is duty—action on the plane of consciousness, and is a high standard of moral action. When one does that which it is his duty to do, even though he have no higher conception of duty than that it is a law of his own nature and of society, he deserves great credit.

In one of his familiar talks with his disciples, Jesus said to them: "So likewise ye, when ye shall have done all those things which are commanded you, say, 'We are unprofitable servants; we have done that which was our duty to do.'"

Manifestly, then, there is some higher conception and plane of conduct than that of conscientiousness or rigid duty. What is it? It is right action on the plane of love, and this is the view offered in the Bible, and more especially in the gospels. Mankind are here summoned to the adoption of a high ideal of life and achievement, not as a formal, prescriptive, arbitrary requirement of an external authority; not even, as in its essence, as the ideal of conscientiousness and duty, noble and uplifting as this would be; but as the true, free, loving, spontaneous outgoing and realization of his own best nature. Such conception and such a system of ethical principles must purify, ennoble and exalt human life and conduct as nothing else could.

THE BIBLE WORTHY OF STUDY.

I offer these five reasons why all young men and women should give a reasonable portion of their time to a sympathetic and thorough study of the Bible, simply from a literary and an ethical point of view, and even though it be regarded a human production.

Would a study of this library of poetry, song, drama, history, prophecy, etc., when regarded as of purely human origin and authority, strongly influence the life and conduct of the reader and student? Not so powerfully, it may be admitted, as when to the reasonableness of its utterances the sanction and authority of divine origin are added. Nor do mere intellectual conceptions of virtue and vice, however acquired, of necessity result in virtuous life and conduct, though that is their necessary tendency. But a systematic study of the Bible, especially in youth and early manhood, when the brain is plastic and the heart susceptible, and even from the literary point of view, would, in my opinion, not only contribute to all the intellectual aims of education, but would tend to deepen into permanent, worthy moral character.

SHOULD IT BE TAUGHT IN THE PUBLIC SCHOOLS?

Incidental to this discussion, one question presents itself, which can only be stated, not argued or answered. If the study of the Bible, even from a literary point of view, is so important in the education and training of youth, shall the public school, the school supported by public taxation, confer this element of training? The free public school supported out of the public treasury cannot justly, in my opinion, engage in the teaching of dogmatic theology or sectarianism. Nothing could be more repugnant to the American sense of justice and fairness. But on what ground shall these schools educate their children in the literature and history of the Greeks and Romans and the modern nations and peoples of the world, and deny to them the literature of the most profoundly ethical spirit and consciousness the world has produced?

On the great ethical virtues of faith, hope and charity the noblest elements of human character are founded, and of these the richest elements of all modern civilization are but the outflowering. In my opinion, to teach these virtues by their best literary expression, and in a broad, liberal, catholic spirit, is not only the school's duty, but it is its highest privilege.

INDIANA STATE NORMAL SCHOOL.

DISCUSSION ON THE REPORT OF THE COMMITTEE OF SEVEN ON HISTORY BELOW THE SECONDARY SCHOOLS.

By LYDIA R. BLAICH.

OUR times form pre-eminently the age of co-operation. No line of work can be successfully considered in and by itself alone. No nation can bolt its gates against its sister nations. Science, art, commerce and the professions require each other's assistance. Religion is no longer the business solely of the minister, the church and Sunday. Monday, Friday and all the other week days claim it also. The magazine, the daily newspaper and pamphlets written by non-professionals assist the theologians in working out ethics and religion. We have Y. M. C. A.'s; and business corporations that strive for high and noble living during lunch periods and the factory hours.

"Living and life," though in all ages the subjects of paramount importance, seem with each advancing year, to be outdoing themselves in their revelations of the manifold complex interrelations. Man tends less and less to consider the material and the personal, while he reflects more and more upon the related universe and the eternal spiritual. The primitive Aryan worried his brain with the question: "How can *I* build a roof to protect *me* from the rain?" The modern Anglo-Saxon taxes his mind, day and night with the query: "How can *we* conduct education or business so as to insure the greatest physical comfort, the finest intellectual training and the best moral tone to our students or employes?" Already the greatest minds are wondering how the entire world can be organized so that each individual will possess the good of the whole and how the whole can secure the best in each individual.

IMPROVING THE COURSE OF STUDY.

Not long ago, the high schools were interested only in high school work; the elementary school teachers only in their branch of the work. When the secondary schools complained of the meagre preparation furnished by the grades, the teachers of the primary and grammar schools were compelled to get a view beyond their immediate horizon and ask, "What do you demand?" Trying to meet the requests resulted in improving the course of study of the grades. The better prepared pupils sent to the high school necessitated stronger food in the latter; and thus the evolution continued.

President Eliot of Harvard standing on the highest mountain peak and viewing the entire field called for educational reform. In the universities alone? Never; he could not have done his best work under such restrictions. He reached his uplifting arm down to the high school, yea, and to the grammar and elementary schools. Seeing the related whole, he could serve the country.

The Committee of Seven in History could not in justice to the times investigate high school history alone; it was necessary to give a report on history below the high school in order to get the broadest and most helpful light. No more is it possible for us to disregard high school history, for does not the teaching in the common

schools depend directly on the high school and university attitude toward this subject?

The Committee of Seven found history in the grades defective because of a lack of uniformity in courses of study; only one-half of our states have a uniform history course and in some of them adherence to the course is optional. This is not at all surprising. The miracle to me is that there is as great an interest in the subject in the grades as we now find. Listen to the statement made on history in the secondary schools: "Before we began our work it was plain that there was an *awakening* (not developed) interest in this whole subject, and the time seemed to be at hand when a systematic effort would meet with response and produce results. But in spite of all that has been done and in spite of this awakened interest there was no recognized consensus of opinion in the country at large, not one generally accepted judgment, not even one well-known point of agreement which would serve as a beginning for a consideration of the place of history in the high-school curriculum." When such conditions exist in the secondary schools we need not be surprised to find a somewhat phlegmatic interest in the elementary schools and to hear the subject attacked by non-professionals, even though they be well-educated men.

GROWING INTEREST IN HISTORY.

Anything which one generation is to impart to the next through educational institutions must be generally appreciated by many of the elder generation. But educated men, as well as others, are inclined to believe in the indispensableness of the subjects which were considered necessary in their day to obtain the recognition of a liberal education. History was not one of them. It is only within the last dozen years that the great universities even have provided chairs of history. A new subject can force its way into the circle of liberal arts only with much patience after overcoming many apparently insurmountable barriers. The critics, though sincere, honest and kind, fail to face the entire field. They say, "Our children are overworked. Cut down the course. Teach the three R's and be content. What can a child do with history? What does he understand of Herodotus? Greece is too far away to arouse interest here." Our friends forget to ask such other questions as these: "What overworks our children—studies in school, or theatricals, parties and other social functions at night, or the attempt to carry all on at the same time? What has the home cooking to do with the wearing out of pupils? Is our civilization simple or complex? What relation should a course of study bear to the complexity of the civilization? If children understood Herodotus unaided, what is the value of having a teacher?"

Is it only in history that pupils make false interpretations? Is the fact that recently one of my 7 B pupils in the Greek history lesson proved that Cimon was a great sculptor because the book said, "The first man who began to make a figure at Athens after the death of Themistocles and Aristides was Cimon, the son of Miltiades," a proof that history is beyond his comprehension? If so, what does this experience in the 1 B grade of the same building prove? The class stood before Monroe's chart studying the sentence: "Ann has a ragdoll." James then read, "Ann has a rag-time doll." Shall he be taught modern slang and commonisms because they come nearest within the home experience?

PURPOSE OF TEACHING HISTORY.

Shall we now give some thought to the purpose of history teaching in the elementary schools? Only during the last five or six years has Indianapolis really taught history in the grades. We have noticed the following effects: (1) Greater intelligence and alertness on questions of every-day life; (2) A broader human sympathy; (3) An enlarged number of illustrations at the children's disposal in their language work; (4) A better understanding of the reason for having laws and prohibitory acts. This coupled with that vital interest which the deeds of mankind always have for man, and the consequent greater occupation of the mind on vital matters, have improved our discipline and reduced many vexations in government; (5) A vastly increased ability in comprehending and enjoying literature; (6) An improvement in the kind of library books read by the children; (7) A relief of the dearth of instruction so much complained of in the grammar grades; (8) The teachers' powers and knowledge were increased by their being compelled to study the subject they had to teach.

Even with this subject added, there is still a lack of richness in our grammar grade course of study. Professor Mark of Manchester, England, recently visited our schools and he was honest and kind enough to be frank in the expression of his opinion of our schools. He said, "Compared with the English schools, your grammar grade course is meagre."

The Merchant of Venice means more to a 7 A pupil who learns in his history lessons about the crusades and the growth of the Mediterranean

cities; while the drama reacts on the history by putting a beating heart and circulating blood into the commercial events of that time and place. The reading of "Julius Cæsar" in connection with Roman history gives added vitality to the history text-book. Undoubtedly Shakespeare's plays have superseded history; but where would Shakespeare have been, had no Plutarch preceded him? History and literature form a marriage in which a divorce would be disastrous to each. The vision of Sir Launfal gains new life through a knowledge of feudalism and Arthurian tales. Miles Standish and Evangeline give an indispensable heart-touch to early American history, because they seize the keynote of the immortal in human events, and show the child in a way in which all other methods fail to accomplish, that a deed is not done when 'tis done; that a man's soul is not entirely his own; that a king by the fiat of his word scatters blessings or curses over thousands of lives. . . .

SCOPE OF HISTORICAL STUDY.

We have no right to teach United States history alone, or even to content ourselves with English history. This country, this state, this city, have something in common with the commercial relations of the Italian cities, with the religious struggles of Luther, the Greek aspiration for the beautiful, the Roman striving after law, the Hebrew yearning for the fulfillment of the law of the Father, Cyrus's release of the Jewish captives, and the Egyptian struggle for immortality.

By far the larger per cent. of our people receive technically merely the education of the elementary schools. Shall they be deprived of the training in comparison of events and deriving conclusions therefrom? How can they intelligently comprehend the newspapers and magazines which make so many references to past events of European and Asiatic nations?

No other subject gives a better impersonal opportunity for concrete discussions of ethical questions than history. Last winter a class was greatly exercised over Themistocles' triumph at the Olympic games after the battle of Salamis and later on his exile. Dewey was at once brought up as a parallel case; and one child said, "That seems to be the world's way."

Charles W. Eliot says: "The third subject which demands an entirely different position from that it now occupies in American schools and colleges is history. If any study is liberal and liberalizing it is the modern study of history—the study of the passions, opinions, beliefs, arts, laws and institutions of different races or communities. If the humanity or liberality of a study depends upon its power to enlarge the intellectual and moral interests, quicken the sympathies, impel one to the side of truth and virtue and make him loathe falsehood and vice, no study can be more human or liberal than history.

The report of the Committee of Seven maintains that "progress in education has invariably followed the adoption of uniform courses of study; Germany is cited as an example. I can not fully agree with this unless it is restricted in its meaning. I believe in this much uniformity: that all the forty-five states give instruction in ancient, medieval and modern history in the elementary schools, but each section of the country should work out its own course by this guiding-star.

COMPARISON OF COURSES.

The State course and the Indianapolis course in history differ considerably. I have made an earnest study of both courses and the question as to which is the better is constantly before me. I am willing to put either course into the hands of a well-informed, enthusiastic teacher.

From the recommendation of the Committee on Secondary Schools that we should have three concentric circles of historical instruction, it would seem that the Indianapolis course is the better. In our first four grades, the pupils receive a good knowledge of myths, explorations and discoveries without dates. In the first term of the fifth grade we take all of the *Ten Boys*. In the advanced fifth, children read *American Neighbors*, a simple compilation of modern geography and history of the countries of the western hemisphere. In grade 6 B in connection with the geography of the United States more detailed accounts are given orally by the teacher, of explorations in various sections of the country. The 6 A grade deals with Egyptian and Asiatic history; 7 B's take Greek and Roman history; 7 A's medieval history; while the 8th grade carries the contemporary history of England, France, Holland and Spain with the history of the United States.

The *Ten Boys* is so vividly written that it can be condensed into a short period, and with it carried alone, the children get a beautiful general view of the whole in much shorter time than the state course gives it. The child needs a broad view of the whole without too much detail and suspense. Why not give *Ten Boys* to him in a few months without troubling him with

outside information? It is imaginative, real, beautiful, concise, but complete.

In our 6 A grade we begin our second concentric circle of history, giving it more didactically; but it is developed orally by the teacher and reproduced by the pupils in recitation and in writing. The pupils write their own histories for study work and illustrate them with clippings and personal drawings. We do not demand collateral work until the 8th grade; however if a pupil desires to do outside reading he is assisted. The reason for not having a text-book here is that a teacher who sympathetically develops (not reads) the stories and insists on good reproductions from the children is rendering them a greater service in their initiation into the study of plain, didactic facts than if she held a text-book in hand and quizzed.

The pupils do their first text-book history learning in grade 7 B. It is much easier for those 7 B pupils whose teachers are enthusiastic in history, whose knowledge is broad and who therefore have power to see the events in their true magnitude; for they use their large experience in amplifying, explaining and showing relations, often using the text as a handbook, thus showing how to study. The work in grade 7 A is easier on account of the previous term's training in the use of the text-book. The work in our eighth grades has improved several hundred per cent since the pupils have a panorama of the world's history.

CORRELATION.

I am glad that the report demands a correlation of subjects. Nothing stands alone. Surely geography, literature and history should work hand in hand. We, in Indianapolis, do much of this. *Ten Boys* is studied with Eur-Asia in geography; Greek and Roman history are correlated with physical Europe and political Greece and Italy. I fail to find such connection in the state course. In the sixth year, for example, the history of England with the Norman Conquest, Magna Charta, and War of the Roses is studied simultaneously with the geography of the United States.

A brief survey of the correlation in the Rein school at Jena may be of interest. It will be seen that sacred history holds its own as a distinct subject in the curriculum.

	Sacred.	*Profane.*
1st year,	Grimm's Fairy Tales.	
2nd year,	Robinson Crusoe.	
3rd year,	Patriarchs, Moses.	Thuringian Tales.
4th year,	Judges and Kings.	Nibelungen Tales.
5th year,	Life of Christ.	Christianizing Period.
6th year,	Life of Christ.	Kaiser Period.
7th year,	Paul.	Reformation.
8th year,	Luther.	Nationalization.

Taking one particular school year, say the fifth, we see that the Life of Christ and the Christianizing of Germany are related in thought. The geography in the Fifth grade includes (1) The land of the Saxons—the Harz, Elbe, Weser, etc.; (2) The land of the Slavs; (3) The land of the Franks. This is in correlation with the territory Christianized.

Perhaps the class statement of the aim of a series of geography and history lessons in this grade will show more clearly how much stress is put on correlation.

HISTORY AIM.

To-day and in the coming lessons we shall tell about a German King, who, like David and Solomon in Canaan, founded a Kingdom in Germany and released our fatherland from a troublesome enemy.

GEOGRAPHY AIM—THE HARZ MOUNTAINS.

We now wish to become better acquainted with the mountains, among which Henry I. often hunted and where, according to tradition, his election as German emperor was first revealed to him.

In the Nature Study, deserts are studied in connection with the stories of John in the desert and Jesus in the desert.

The Reading consists of historical poems and extracts, descriptions and accounts from the best authors.

The history covering the work of the Saxon emperors is further supported in the art instruction by the study and drawing of Romanesque architecture and ornament—as representative of that period. The column after being sketched is compared with the Egyptian, Assyrian, Persian, Phœnician, Greek and Roman. . . .

To achieve great success, our schools must have teachers who are enthusiasts, who survey from mountain tops the entire field. They must love the subject and live for it. Only thus can the teacher appreciate the mountain heights of history, treat the minor events with the light touch necessary, and inspire her class with correlated stories and explanations out of a bountiful supply.

MATHEMATICS.

EDITED BY

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HISTORY OF ARITHMETIC.

XXIV.—ARITHMETIC IN THE COLONIES.

The usual studies in the early colonial schools were reading and writing. If arithmetic was studied at all, it consisted merely in learning to count and to perform the fundamental operations with whole numbers. We read in the records of a New Hampshire town in 1750 that it was voted "to hire a school-master for six months in ye summer season to teach ye children to *read* and *write*." As late as the beginning of the present century many schools did not teach arithmetic at all.

In the secondary schools "*ciphering*" with whole numbers only was taught to a limited extent. It was the exceptional teacher who knew *fractions* and the *rule of three*. The schools had neither slates, black-boards nor text-books. The *ciphering* was done on paper, and its scarcity made every scrap valuable. Backs of old letters, leaves from discarded ledgers and bits of wrapping paper were all eagerly, though economically, used by the young arithmeticians.

The lack of text-books made it necessary for the teacher to dictate the "sums." This was generally done from a *manuscript book* which he had prepared from the dictation of some other teacher. The writer has in his possession one of these manuscript books prepared by a Connecticut teacher in 1796. It contains many curious things and clearly shows the meagerness of arithmetical teaching of that period. "There were no classes in arithmetic, no explanations of processes either by master or pupil, no demonstrations of principles either asked for or given. The problems were solved, the answers obtained, the solutions copied, and the work was considered complete. That some persons did obtain a good knowledge of arithmetic under such teaching must be admitted, but this result was clearly due rather to native talent or hard personal labor than to wise direction."

During the colonial period arithmetic was rarely taught to girls. In some of the most noted schools before the Revolution, boys were taught reading, writing, *arithmetic;* girls, reading, writing, *sewing*. Warren Burton says that among girls, arithmetic was neglected. They "generally expected to obtain husbands to perform whatever arithmetical operations they might need beyond the counting of fingers." Women occasionally taught, but she "would as soon have expected to teach the Arabic language as the numerical science"

In the early colonial days all arithmetical books came from England. *Hodder's Arithmetic* first published in London, in 1661, was extensively used in the colonies. An American edition was published in Boston in 1719. *Cocker's Arithmetic*, one of the most famous English texts, had a considerable circulation in America. It was the first English arithmetic to entirely exclude demonstration, and consider commercial questions only. Most arithmetics since have followed the example of Cocker. This book was also republished in America. Beneath a portrait of Cocker in the American edition is found the following lines:

> "Ingenious Cocker, now to Rest thou 'rt gone,
> No art can show thee fully, but thine own;
> Thy rare Arithmetick alone can show
> Th' vast Thanks we for thy labors owe."

Greenwood's Arithmetic, described in the June INLAND EDUCATOR, was probably used quite generally in Massachusetts.

The first book to gain a wide popularity in the colonies was *Dilworth's School-master's Assistant*. This book was first published in London in 1754. A number of American editions were issued. At the time of the Revolution it was the most popular arithmetic. The book was modelled on the plan of Cocker. All definitions and rules were given in the form of questions and answers. The book as a whole had little to commend it.

SUBJECTS THAT SHOULD BE OMITTED FROM ARITHMETIC.

1. The following may be said to have little or no utilitarian value for the general citizen, and because they give a false notion of business they may also be rejected as undesirable exercises in logic.

(a) Equation of payments.

(b) Alligation (now rapidly disappearing from English and American text-books, although still found in the German.)

(c) Insurance, in the form usually presented in text-books.

(d) "Profit and Loss," the text book expression not having the American business meaning, and the problems being merely ordinary ones of

simple percentage, not worthy of a special chapter.

(e) Exchange as usually taught. . . .

(f) Commission and brokerage so far as the subject relates to problems like the following: "A sends B $1000 with which to buy wheat on a 2½% commission: how much can B invest?"

(g) Stocks, where the problems require, as in many text-books, fractional numbers of shares.

(h) Partial payments beyond the common method in the state in which the pupil lives.

(i) Annual interest, beyond the mere elements.

(j) Compound interest, beyond the ability to find such interest.

(k) Compound proportion, a subject in which hardly a text-book problem can be found that has any practical value, in spite of the pretensions of the subject. As for mathematical explanation, it would be difficult to find a text-book making any attempt in that direction.

(l) Problems in denominate numbers involving more than three denominations at a time, and those involving tables not needed in daily life.

2. The following may be said to have some, and might have much, culture value, but should be omitted on other grounds.

(a) Series, because the subject can better be treated where it belongs, in algebra.

(b) The long form of greatest common divisor before about the eighth grade, because it is taught only for its logic, and this logic is too much for the average child below that grade.

(c) Compound proportion, already mentioned, because almost no arithmetic pretends to treat it otherwise than by rule, and an explanation is too difficult for pupils—as apparently for authors. Indeed, it is doubtful if the child derives much good even from simple proportion as usually presented. [*From "The Teaching of Elementary Mathematics,"* by D. E. Smith. The Macmillan Co., N. Y.]

SOLUTIONS.

18. This problem was taken from *Roger's Mental Arithmetic*, but a mistake was made in copying it. As it appeared in the May number the following is the solution: (See Fig. 1.)

ABC=DEFG.

$\frac{CB}{2}$=GF=144 5 ft.

Area of ABC=27720 sq. ft.

Area of ABC+GF=EF=191.8339 ft.

$\sqrt{\left(\frac{AB}{2}\right)^2-\left(\frac{EF}{2}\right)^2}$=AE=64.3443.

2×AE=HB=128.6886 ft.

$\frac{CB}{2}$—HB=IH=15.8114 ft.

$\sqrt{HI^2+AH^2}$=AI=192.2479 ft.

$\frac{AI}{3}$=JI=64.0826 ft. Distance of girl I from teacher J.

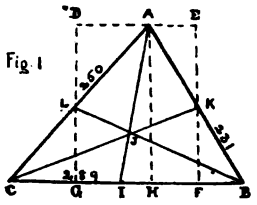
$\frac{2AI}{3}$=JA=128.1652 ft. Distance of boy A from teacher J.

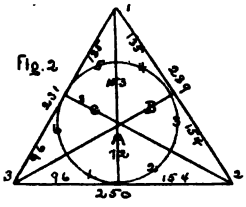
In a similar way it is found that the girl K is 81.4249 feet from the teacher and the girl L is 62.2736 feet from the teacher; the boy B is 124.5473 feet from the teacher and the boy C is 162.8499 feet from the teacher.

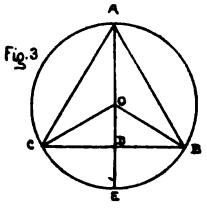
—COLONEL LEUTMAN, Stone Bluff.

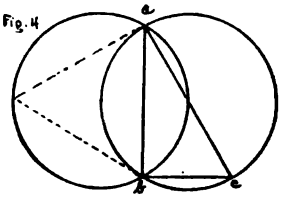
18. The problem should have read, "A teacher amuses six of his pupils by laying off a level triangular space with sides 231, 250 and 289 ft. respectively. He stands at the center, each of the three girls on a side equidistant from him, and a boy on each corner; how far is he from a girl and each of the three boys?" The solution is as follows:

Area of triangle, Fig. 2, is 27720 sq. ft., which divided by half the perimeter or ½ of (231+250+289)=385, gives 27720÷385=72 feet radius of inscribed circle, or distance each girl is from the teacher. Referring to figure 2 you will observe 3 triangles, which mark A, B, C on the 3 radii of inscribed circle, which are the altitude. Triangle A has 250 for its base, and 72 for altitude, and the area is ½ of (250×72)=9000; triangle B has 289 for base and 72 for altitude, making an area of ½ (289×72)=10404; and triangle C has a base of 231 altitude 72 giving an area 8316. Each of these triangles is divided by its altitude into two right angled triangles,









which you may mark 1, 2, 3, 4, 5, 6, on the arc of inscribed circle, commencing with the left hand one of triangle A, whose base is marked "96," and passing to the right.

Triangle 2 and 3, 4 and 5, 6 and 1 are respectively equal, because their altitudes and hypothenuses are equal. The difference between triangles A and B is 10404—9000=1404, which is the difference between the right triangles 1 and 4 because 2 and 3 are equal but we have found 4 and 5 are equal and 1 and 6 likewise; hence it becomes evident that 1404 is the difference between the areas of 5 and 6, which are the two divisions of triangle C whose area is 8316. Therefore the area of the right triangle 5 is ½ of (8316+1404)= 4860 and its base is (2×4860)÷72=135. The area of No. 6 is ½ (8316—1404)=3456 and its base is (2×3456)÷72=96: Boy No. 1 is $\sqrt{135^2+72^2}$=153 ft. from teacher. Boy No. 2 is $\sqrt{96^2+72^2}$=120 ft. from teacher. Boy No. 3 is $\sqrt{(250-96)^2+72^2}$= 170 ft. from the teacher.

—CHARLES A. WILT, German, O.

19. $1,200 will buy ten $100-dollar bonds at 120 or twelve at par. The semi-annual interest on the ten 5% bonds is $25; on the twelve 3% bonds it is $18. Now, the average time, till maturity of bonds, that these semi-annual payments of bond interest may draw interest is five years, and the amount of nineteen of these payments at 5%, at the maturity of the bonds is equal to the amount of $475 (their sum) for five years =$593.75. *$1000+$25 (paid at maturity of bonds)=$1,025. $1,025+$593.75=$1,618.75, total amount. In a like manner the amount of twelve 10-year 3% bonds is found to be $1,645.50.

∴ The 3% bonds will amount to $26.75 more at the end of the ten years.

—C. M. ANDERSON.

20. 1st solution.

AE, Fig. 3,=diameter of circle=4½ in.

CO=radius=2.25 in.

OD=¼ the diameter, or 1.125 in.

ODC is a right angle.

$\sqrt{CO^2-DO^2}$=CD.

CD×2=CB, or one side the largest equilateral triangle.

$2.25^2-1.125^2=3.796875$.

$\sqrt{3.796875}=1.948+$.

1.948+×2=3.896+ or CB.

—CHARLES F. BANKS, Wabash.

*As it is not otherwise stated in the problem we must assume that the bonds are redeemable, at maturity, at par.

2nd solution.

Line ab, Fig. 4,=one side of equilateral triangle.

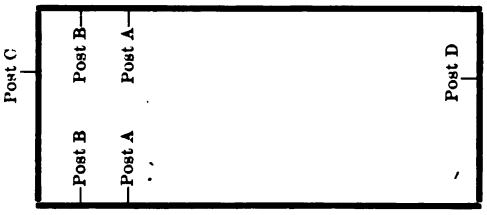
Line bc=½ of diameter of given circle=2¼ in.

Line ac=diameter of given circle=4½ in.

$\sqrt{4\frac{1}{2}^2-2\frac{1}{4}^2}$=3.8971+Ans.

—F. W. DONAHUE, Mt. Vernon.

21. Prob. 8, page 167.



248 posts for sides + 166 posts for ends = 414 posts.

414 × $.22 = $91.08.

The even number of planks on each side is 61.

61 + 61 = 122 planks.

The even number of planks on each end is 41.

41 + 41 = 82.

From post A to post B is 8 feet. One plank serves for both sides.

From posts B to corner is 6 feet. From post C to corner is 4 feet.

6 + 6 + 4 = 16 feet or 1 plank.

From post D to corner is 4 feet or ¼ plank.

122 + 82 + 1 + 1 + ¼ = 206¼ planks.

5 × 206¼ = (1,031¼) or 1,032 planks.

1 plank contains 8 feet of lumber.

1,032 × 8 = 8,256 feet of lumber.

8.256 × 18.50 = $152.74. $152.74 + $91.08 = $243.82.

Though declared wrong by many teachers, the answer in the book must be correct.

—C. C. BOSSTICK, Hymera, Ind.

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SOLUTIONS REQUESTED.

23. Find the volume and surface of a monument whose base is four by three feet, whose top is three by two feet and whose height is 25 ft.

24. Solve 147, page 201.

25. Where under a uniform 24 ft. log must a spike be placed so that three men, one at the end of the log and the other two at the spike, may carry equal weights?

26. If three poles 7, 8, and 9 ft. long respectively are set at the corners of an 8 ft. equilateral triangle, what is the altitude of the point formed by bringing their upper ends together? Over what point in the base do they meet?

SHORT CUTS.—VIII.

Factoring.

28. Know thoroughly the following tests of divisibility:—

a. 2 divides all even numbers.

b. 3 divides all numbers, the sum of whose digits is divisible by 3.

c. 4 divides a number if it divides the number formed by the last two digits.

d. 5 divides all numbers ending in 5 or 0.

e. 6 divides all even numbers the sum of whose digits is divisible by 3.

f. 7 divides a number if the sum of the odd numerical periods minus the sum of the even periods is divisible by 7.

Or, 7 divides a number when the number gotten by taking the sums of once the first digit, 3 times the second, 2 times the third, minus the sum of the same multiples of the next three digits, plus the same multiple of the next three, etc., is divisible by 7; e. g., 53451615 is divisible by 7, for $1\times5+3\times1+2\times6-1\times1-3\times5-2\times4+1\times3+3\times5=14$, which is a multiple of 7.

g. 8 divides a number when the number formed by the three right-hand digits is divisible by 8.

h. 9 divides a number when it divides the sum of the digits.

i. 10 divides a number when it ends in 0.

j. 11 divides a number if the sum of the odd periods minus the sum of the even periods is divisible by 11; e. g., 897831 is divisible by 11, for $831-897=-66$, which is a multiple of 11.

k. 12 divides a number if it fulfills conditions b and c.

l. 13 divides a number when the sum of the odd periods, minus the sum of the even periods, is divisible by 13.

SOME NEW BOOKS.

FISHER AND SCHWATTS' ALGEBRAS.

Rudiments of Algebra.—In this a general introduction to the algebra is given, covering the subjects of general number, fundamental operations, fractions, factoring, and simple equations. The exercises are numerous and remarkably well chosen. The illustrations are clear and are expressly shown to be illustrations and not proofs. The typography and page arrangement are unusually good.

Secondary Algebra.—This book includes all the topics in algebra usually studied in the best secondary schools. The characteristic features of the book are its clearness of statement, accuracy of definition and its large number of fresh and well selected exercises. The authors are both able mathematicians and excellent teachers. They have taken unusual care in the preparation of every detail of the books, and the result is a most excellent series. The books are published by the authors at Philadelphia.

PIERCE'S ARITHMETICS.

First Steps in Arithmetic and *The Elements of Arithmetic* are two little books for the second and third school years respectively. They are written by Ella M. Pierce, supervisor of primary grades Providence, R. I. The books contain an abundance of fresh and interesting material. Number will surely be interesting to the child who has it presented to him in the attractive manner of these books. They come from Silver, Burdett & Co., Boston.

Sensenig and Anderson's New Complete Arithmetic.—This book is the last of a proposed series, prepared by Professors Sensenig and Anderson of West Chester (Penn.) normal school. It has grown up out of an experience of thirty years in teaching the subject in normal schools, high schools and business colleges. Some of the striking features of the book are its completeness, the addition of *mensuration* as a fifth fundamental operation, replacing what has been called *partition* by some writers, the intelligent treatment of proportion, the full treatment of business methods and the very large number of exercises. The book is published by Silver, Burdett & Co., Boston.

RAWLIN'S ARITHMETICS.

This is a three-book series published by Lippincott Company, Philadelphia. They bear the names *Lippincott's Elementary*, *Lippincott's Mental*, and *Lippincott's Practical*. The books all show careful preparation. The three books form a

splendid school series. The mental arithmetic has in it a large number of interesting and well graded problems. The theory and practice are clearly set forth in the practical. In the elementary book the work is so well graded that the beginner will surely find his arithmetic a pleasant task. Both the science and the art are kept continuously before the student. The books are presented in a very neat and attractive form.

A Brief History of Mathematics.)—The Open Court Company of Chicago is doing great service to the cause of Mathematics by the translation and republication of a number of classic works upon the history, logic and pedagogy of the subject. The most recent issue of the series is Professors Beman & Smith's translation of Dr. Karl Finks' History of Elementary Mathematics (*Geschichte Der Elementar-Mâthematik*).—This work treats the subject under the general heads of Arithmetic, Algebra, Geometry and Trigonometry. Under these heads the matter is arranged chronologically, and the development shown in an interesting and readable way. The subject is treated from the historical and not the biographical standpoint. The translators have added a number of pages of biographical notes. This book is the best that has appeared in English. It should find a place in the library of every teacher of mathematics. It is a hopeful sign that there is an awakening of interest in the history of mathematics. No subject will contribute more to the power of the teacher. It is to be hoped that teachers will so generously appreciate this book that the Open Court Company will be constrained to bring out a number of others bearing upon special mathematical subjects.

Roger's Higher Mental Arithmetic.---It is very gratifying to see a revival of interest in the subject of Mental Arithmetic. No subject in the common school curriculum can do more to develop independent thinkers. Roger's little book contains sixty-one lessons of twenty problems each. The lessons are well graded and the problems in each are so arranged as to furnish good work for the brightest as well as the dullest pupil of the class. Such a book will serve a good purpose in developing both interest and power. It is published by Roger & Sons, Columbus, Ohio.

NOTES.

Mr. C. E. Welborn for the past two years the teacher of mathematics in the Anderson high school has resigned and will go to Stanford university to take a course in engineering. It is a distinct loss to education for such men to leave the teaching profession.

Dr. S. C. Davisson, associate professor of mathematics at Indiana university has just returned from a two years' stay at the university of Tübingen. His thesis for the doctor's degree has been published in neat pamphlet form. It bears the title "Ueber die Geodâtische Linie der Mannigfaltigkeit." In it the author makes a number of contributions to the theory of Geodetic Lines. Dr. Davisson will be at his old post in Indiana university the coming year.

The June number of *Notes and Queries* contains a very interesting article upon "Magic Squares" by V. Lehmann, Christiania, Norway.

Professor A. S. Hathaway of the Rose Polytechnic is the national secretary for the United States of the International Association for promoting the study of quaternions and allied systems of mathematics.

Dr. Thomas Craig professor of mathematics in Johns Hopkins university died in Baltimore May 8. He was one of the best known mathematicians in the country.

HISTORY IN THE GRADES.

By ELLWOOD W. KEMP.

IT was estimated in 1886 that eighty per cent. of the pupils in the public schools in the United States never reach the high school. If this is true, the schooling which most of our children get must fall between the ages of five and fifteen. It is the grade and district school teacher then who shapes the ideals of life duty and destiny vastly more than any other person, the parent excepted. I do not deny the influence of the church with its adjunct of the Sunday-school, nor the influence of society in general over the development of character, but the *systematic* training which *most* children get, and their worth to themselves and to society depends more upon the district and grade teacher than all other influences combined excepting, per-

haps, the home. Between the ages of six, when he enters, and fifteen when he leaves school, the pupil must be given those root ideas which will shape his economic, religious, political, social, and educational career through life. He goes to school eight years in order to fit himself to live the next sixty. Now the general question for the teacher is what can she do to get the child intelligently and sympathetically fitted into this life in eight years; but the specific question for me to say a word about is what can the teacher of history do for him in this relatively short, but most impressionable time.

She can do much, very much, vastly more than she has yet done. In the first place, she can teach children that history is a life and not a book, that to know and feel and live history is to know and feel and live in this life and not to parrot off a book in recitation from memory.

THE STARING POINT IMPORTANT.

I repeat that the starting point for our grade and district history teachers is a clear conception of what history is. History is the life that mankind has lived in the world. It is mankind's climb up the ladder of civilization from savagery to a fuller and yet fuller civilization. It has been, and is now, a slow climb. It is made up of the conscious and unconscious struggles of men to get to the higher rounds of the ladder,—some ascending faster, some slower; some being pushed off and crushed to death in the struggle. It is made up of a vast number of human elements,—of blind passion as well as reason, of love, of hate, of selfishness, of unselfishness, of magnanimity, of meanness, of tyranny, of liberty, of bigotry, of tolerance, of greed, of philanthropy, but notwithstanding this great diversity of ideas and feelings which go to make the life of history, it is upon the whole like an ever enlarging stream receiving into its current hundreds of tributaries of different clearness and purity, but carrying in *its* current the power of its own purification, and therefore becoming ever sweeter and healthier as it flows on. This idea that history is one unbroken current of human life is as essential for the grade teacher in the first year as it is for the university teacher in the senior year. There can be no good historical teacher without it. It is the root idea upon which a course of history through the grades should be planned. If children are to be taught to think and feel and act history in the present, they must be led along the historical stream so that they may see and feel how mankind has thought and felt and acted history in the past. They must see the stream at its source, follow it down through its great reaches, see the tributaries which flow into it, see the eddies and whirlpools and rapids which beset it, see the many hulks drifting without keel or rudder which have made shipwreck thereupon; see the life on its banks as well as that on its bosom. In short there is no way to study history but to live it, and no way to live it but to see it in the order in which it has developed itself. No one would think of studying Burke's or Webster's or Luther's life by beginning it at seventy and following it backward to infancy. Why do so with history? Its life is but the life of a mighty man growing from infancy to youth, from youth to manhood, from manhood sometimes to old age, but happily always finding in the nick of time that fountain of youth in which he plunges and comes forth rejuvenated, all aglow, his loins girded and ready again for the race.

STUDY HISTORY SYSTEMATICALLY.

The pupil, then, between the ages of five and fifteen ought to study systematically some of the successive stages through which this great man—human history—has passed in this growth from infancy to maturity. The work should be systematic—it should start somewhere, go somewhere, get somewhere. It should not do a little work in Greek mythology in the third grade and then leap over all the intervening time and begin the study of the pioneers of the Mississippi valley in the fourth, as one authority recommends. It should not entirely omit history in the first and second grades, give nothing but Greek mythology in the third, and eighty biographies covering the entire history of the human race from Lycurgus to Lincoln in the fourth, as has been recently recommended by another program for primary history. These programs are too disjointed. They dip up a cupful here and take a sip of a spoonful there, but they do not start out from the first lesson to show the institutional stream of history in its gradual development. This should be the conscious and persistent aim from the first lesson in the primary grade to the last lesson in the eighth.

Briefly, then, I would recommend something like the following course:

I.

In the first grade study the primitive religious, social, educational, industrial and governmental life of the Aryan race as it developed in the Indus valley. In this study its primitive tools, and how they were used on farm and in the home, cooking, weaving, spinning; its religious practices, its gods, sacrifices; its methods

of writing, book-making; its games, amusements, dress; its government. These are merely examples of topics that should be treated through picture and story and biography and appropriate poem, and at all times compared with and interpreted by the life of the present in which the child is constantly mingling. In this way should the shuttle of thought be kept constantly playing between the present and the past realizing the past through the present, interpreting the present through the past.

II.

In the second grade study the characteristic life as it grew up in the two great valleys of the Tigro-Euphratia and the Nile, and also the two little but important peoples which sprang up between these two valley civilizations; namely, that of the Jews and that of the Phœnicians. Here, as before, the aim of the teacher should be to help the child to live with these people in their institutions. Write books on clay tablets after struggling for thousands of years in developing an alphabet, build cities with mighty walls, with temples of gold and winged bulls with the old Babylonians. Go into the desert-framed, cliff-bounded Nile valley and sow and reap and thresh with the primitive Egyptian; write with hieroglyphics, build everlasting temples and pyramids and sphynxes, worship the sun and old Father Nile with its thousand pendant nourishing breasts, dream the early dreams of immortality. Tramp through the desert sands with Moses and fight the battle of Monotheism with him; go into Canaan and fight the Philistines out and kill them as we have the Indian in North America, and talk over and reason some about both the good and the bad of treating people thus; turn to the Bible and read the songs which they sang after some of their great victories, study the life and education of David and see how the poems which he wrote grew out of his life and surroundings as naturally as the ode on Lincoln grew out of American history. In short, study the Hebrew people as both influencing and being influenced by their surroundings. And then for the last work in the second grade study the Phœnicians. See and live with them, clinging, as they were, on a little fringe of land on the Mediterranean, with mountains shutting them off from the East, with the Mediterranean inviting to the West. See them with caravan train bringing from all the lands thus far studied the silks, the spices, the furs, the stones, the linens, the letters, the arts, wealth, and with the new instrument of civilization—the ship—striking boldly west around the shores of the Mediterranean sowing the seeds of all the best that had thus far been now thought out, the thousands of years now already gone.

III.

In the third grade study the land of beauty; with its combination of sea and land, and wood and mountain, and marble and sky. In this little land of Greece, cut up by its mountains and arms of the sea into hundreds of little disconnected valley nests, place the little city states. Walk over this land of enchanting beauty in its infancy and simplicity and hear old Homer sing of its warriors and heroes. Have the pupil know Achilles as he would Lincoln. Follow Greece from its infancy to its confident young manhood, and see its manly, young heart meet old Asia at Marathon and Thermopylæ and Salamis and save for mankind the accumulated life of all the past ages. With Greece free, follow her growth till it blossoms in all its glory, like an apple orchard in May, into sculpture and architecture and tragedy and comedy and oratory, and speech of matchless grace.

Let the children live with these people in their theater, and gymnasium, stand still in the market place and hear Socrates talk, walk over amongst the trees in the academy and get acquainted with Plato, go to the Olympic games, and then with Greece all aglow with bloom, see these blossoms caught up as it were by the wind and borne back over the East and Egypt in the person of Alexander the Great, Greece paying back to her early benefactors a thousand-fold for what she had gotten from them through Phœnicia. In youth she had freely received, in manhood and old age she was freely giving. Thus, gradually, there will ripen in the mind of the child the idea that no generation, as no great man, either liveth or dieth unto itself.

IV.

And in the fourth grade what? Study here the people in essential character the very opposite of the Greeks—stern, sober, austere. See infant Rome, nourished on wolf-milk grow to be as fierce and hungry as the wolf itself. Follow it through struggle of Patrician and Plebeian, see the principle of give and take develop itself through these struggles. See Rome creep slowly out from her seven hills and by law and plowshare and road grapple all the people of Italy to her heart as with "hooks of steel." Then, like a mighty spider, see her spin her web rapidly over the whole field already studied through the first, second and third grades, binding these scores of people into one immense central gov-

ernment such as the world up to that time had only occasionally dreamed of but had never in any degree realized. Now, although the child is here only in the fourth grade, as he looks back over his four years work by the assistance of the skillful teacher he will begin to see *dimly* how the stream of history had its source back in the old Asiatic valleys—how simple tools, and wealth and the alphabet and the beginning of art and monotheism and the ships all had their beginning there; how this stream from source to mouth was enormously enriched by the beauty and thought of Greece; how all these ever lengthening threads extending out like the warp of the carpet were woven through and through by the woof of Roman law into one compact central state so firmly that Rome said and believed she would be eternal; that when Rome fell the world would fall.

V.

But the fifth grade should see Rome totter and crumble and fall (rotten at the heart) as she became under the rude push and jostle of the fierce, barbaric liberty-loving Teuton. The fifth grade I say, should have the Mediterranean with all its culture, its wealth, its law, its luxury and go into the German woods and live with the old Teuton for 500 years—from 500 to 1000 A. D. What a different air he will breath in these forests from what he had breathed in Rome, or Greece, or Egypt, or Palestine, or Phœnicia, or Babylon, or over in the Indus Valley! Here he is amongst a people who, when he first meets them, cares nothing for art or philosophy or literature or law. But there is one thing that every man cares for so intensely that he will give everything he possesses to get and maintain it—that is his own personal liberty. Let the children live with these early Teutons—eat and drink and fish and hunt and fight with them. Help them build their little villages with plenty of elbow room for each man's house. Elect a chief, go to war with him, and divide the spoils of war equally amongst all the warriors. These were our fathers; out of these early Teutonic struggles for personal liberty sprang the men who in after generations were to fight the battles of personal freedom against Kings John and Charles and James and George. Out of the travail of this time are Hampden and Pitt and Washington and Lincoln being given to humanity. The rude oak cradle which rocked these wild Teutonic children of the woods was unconsciously rocking the infant America. But having seen these Germans in their free unorganized condition almost without institutions—but with the most jealous regard for the rights of the individual—the pupil must be led to see the great historic stream of the past, with its thought and culture—already studied in the first four grades—break northward through the barriers of the Alps and like the Nile, gradually rise till it inundated all Western Europe. I mean he must see Christianity with its softening influence take hold of these people and silently organize them into institutions. Follow the faithful monks and missionaries through swamp and woods till Europe is dotted all over with monasteries; see the life in these monasteries outside and in; some clearing the fields and draining the swamps just as our fathers and grandfathers did three generations ago in Indiana; some gardening, some gathering herbs for medicine, some curing disease with herbs and relics, some making pilgrimages to holy places for relics, some building buildings, some making parchment, some copying copies of the Bible, some copying the Greek and Roman writers. These faithful, earnest self-sacrificing pioneers of the early Christian centuries must be seen lifting the Teuton up from darkness into light if we would see Europe from 500 to 1000 A. D. And then another agency must be seen working in the same time—the Roman influence silently laying hold of these rude people and teaching them how to organize themselves into governments—feudalism arising with its lords and serfs, with leisure and luxury for the few and labor and hardship for the many. The life in and around the castle should be worked out in its details just as was that about and in the monastery. These three chief things, then,—first, the life of the Teuton in the rough when he does not care a straw for institutions, when he wishes to be personally free and unrestrained, second the Teuton in the monastery gradually being shaped and influenced by Christianity, third the Teuton in the castle slowly learning the lessons of government from Rome, and tempering Rome's stern rules of organization with his own love of personal liberty, will help the pupil to see how this last great historic people of the world—the Teuton—moves into and takes his place in the stream of human history.

[Work for the remaining grades will be outlined in the August number.]

THE DOCTRINE OF INTEREST.

By MARGARET E. SANSOM.

THE intellectual emotions owe their origin partly to the feeling of interest. This feeling works itself out through the intellectual powers. For if a child is interested in some certain subject, he will naturally wish and put forth an effort to learn more concerning it and through the effort he puts forth he gains not only the knowledge sought for, but something of far greater value, the intellectual ability to accomplish greater things. The child's bent of interest is determined by his associations, his training and his natural instinct. So if his interest is trained in the proper way, it may be of great value in his education; proving a stimulus for greater activity.

Let us think of those things that arouse and those things that discourage interest in the child. A new way of presenting facts would be one good way to arouse the interest, for the child grows weary of the same things being put in the same way. He thinks he knows it and does not pay attention, thus fixing the habit of inattention. The child must be allowed enough liberty to work out what he already knows, for by so doing he learns better what he knows and prepares himself for the new fact which he may work out, thus arousing greater interest. He wants to know more about it. Lead from the known to the unknown, because unless there is something with which he may link the new fact, it is of little value, for he cannot understand or appreciate it in its proper relation. He soon forgets it and thus looses the link to which he should connect the next new fact to make the complete chain. The teacher must be saturated with interest in the subject, herself, in order to present it so as to make the children interested and the subject impressive as it should be.

There are these very evident influences that lead to lack of interest: The inadaptation of the subject to the child, the uninteresting way of presenting the subject, the pushing of the child too rapidly until he falls into the stage of arrested development. With these thoughts in mind we are ready to trace education from its beginning, and by noting the means, or devices used by difierent ages, we can determine how education has progressed and what part interest has had in its progression.

Very little pertaining to this subject can be found in the education of the ancients. Little is known of the actual state of educational practice among the Hindoos. The Hindoo Brahmins even tried to crush out all individualism by preaching absolute self-renunciation, thus allowing interest no place in their natures. The objects which the different nations had in educating their people determined their course of procedure, and these objects were decided by their ideals of a perfect man. Among the Romans it was the brave soldier, hardened to fatigue and readily yielding to discipline. Among the Athenians, it was the man who united in himself the happy harmony of moral and physical perfection. Among the Hebrews, the perfect man was the pious, virtuous man, who was capable of attaining the ideal traced by God himself. In these nations we see there was the thought of attaining, but as how it was to be done, they gave not a second thought. Their first impulse was to compel the children to do it and so they did. So our doctrine had no hold there, nor were these nations progressive in their education through the means they used.

The fact that China for more than three thousand years allowed tradition to characterize its education, with mechanical and formal methods, shows plainly that interest had no place in their idea of instruction. For surely no two generations would be interested in the very same things, and if a people is satisfied with the same ceremonial, minutely defined and punctually followed methods, the important requisite to the best education is not considered there. Their education was all memory work and involved things that children could not understand, to say nothing of interest.

The pedagogy of the East makes no appeal to the free energy of individuals; but the fact that the people in antiquity have generally lived under the harassing oppression of religious conceptions, of fixed tradition and of political despotism, gives us to understand, to some extent, why those people did not consider this factor, we are tracing, in their methods. We find Plato hesitating as to methods, between the doctrine of effort and the doctrine of attractive study. He says on the one hand that education is a very skillful discipline, which, by way of amusement, leads the mind of the child to love that which is to make it finished. On the other hand, he protests against the weakness of those parents who seek to spare their children every trouble and every pain. He believed the inclination to humor the likings of children is the surest of all ways to spoil them. "We should

not make too much haste in our search after what is pleasurable, especially as we shall never be wholly exempt from what is painful." He gives a definition of a good education thus: The virtue which is shown by children when the feelings of joy or of sorrow, of love, or of hate, which arise in their souls, are made comformable to order.

From the fact that Quintilian advocated the use of amusements as means of instruction, we can infer that he certainly wished to interest the children by the amusement so as to impress knowledge upon them; and later on he says "use any means whatever that will make easy the child's learning."

Christianity introduced new elements into the conscience and seemed called to give a powerful incentive to the moral education of men. The doctrine of Christ was at first a reaction of free will and of personal dignity against the despotism of the state. Henceforth it was not simply a question of training citizens for the service of the state, but the conception of a disinterested development of the human person made its appearance in the world. Christ sought to interest the people in his religion and in turn education receives its benefit from this doctrine.

That one character who stands out so prominently in German history, Charlmagne, established the doctrine of interest by first trying to interest the instructors, who were the clergy and monks, expecting them to interest the children. Here we recognize that principle set forth in psychology—of the teacher's interest influencing the children so much.

During the period from 1550 until 1700 education was so devoid of interest that it was known as "abstract theological education." Following this we find the reaction, which takes form in practical education. In proportion to growth of interest came reforming of discipline and education lost a great deal of its one-sidedness, its narrow and unpractical course of study, its unworthy aims. In comparison to the knowledge of words learned so diligently before, now came knowledge of things. Then appeared men belonging to an intellectual league all over Europe —though crude in their theories they were pioneers of the new age, when interest should hold full sway.

About this time Montaigne strongly asserts the use of interest as an element in education, saying, "child should taste and relish things and choose according to his taste," sometimes with the help of the instructor and sometimes by himself. He believes that teachers before this made education repulsive to children through horror and compulsion.

Next came Bacon with his introduction of the Inductive Method of study which resulted in a great impulse to study nature. This is really the first radical line of interest, as education is first considered for its own value. Before it has been only traditional and hence somewhat mechanical. It had not been necessary heretofore to engage interest for children had to learn whether they cared to or not. The very essence of Bacon's theory of education is *investigation*, which psychylogy teaches us will awaken interest, *experiment*, which is as an outcome of interest and leads to greater intensity of the same, and *verification* which strengthens it in many ways.

Ratich advocated the same in his teaching children to read and from their reading he taught them grammar and spelling. He thought that to interest them in their reading they would be interested in their grammar and spelling. His first maxim states his plan:—"All teaching that is forced, violent or contrary to nature, is harmful."

Commenius was himself so thoroughly interested in education, that he could not but give it out in his methods. One of his principles was:—"Learning should be made agreeable. Teachers should always have something interesting and profitable to communicate to their classes."

He shows his realization of the psychological fact of leading from the known to the unknown, in his maxim: "There should be an easy gradation in studies; the things naturally connected in themselves should be in teaching." Again: "Studies should be adapted to the capacity of the child." "Things to be done should be learned by doing them." We see that these are all requisites of interest, and since he advised these we know that his object was to interest the pupils.

Next, we notice the place Locke gives to this incentive for study, as a reaction after a vigorous system of methods which make education repulsive because of its tiresome processes, when children learned because they were compelled and teachers were as much bored as were the children. Although he may go to extremes, we cannot but justify his processes to make the studies interesting.

No one before this had recognized the need of the activity and liberty which are natural to the child, or insisted so strongly as did he on respecting their independent disposition and tastes to some degree. Since this period Herbert Spencer has thoroughly demonstrated the

fact that the mind really takes to itself only that knowledge which interests him, and a pupil's dislike for any subject is due to one of the things: that the subject is not presented in such a way as to be interesting to the child, or because the mind is not ready to receive it. Locke says that education should not be drudgery; then interest must have sway.

Jansenism made its education, especially in early years, depend upon interest. The child's intelligence was to be developed by some form of amusement and later the whole school was taken into the woods and while they walked along the teacher instructed them. They were allowed to climb the hills or run through the woods but always came back to receive the lesson from their sport. Their maxim was to make instruction pleasant and not to tire the children with what they could not understand.

We find in Fenelon, as one of his best characteristics, the desire that studies be made interesting, but we find also that he goes to such an extreme with this, that he abuses it, making it an amusement. As he criticises the instructions of the Middle Ages, we cannot but agree with him that their harshness was unreasonable. He advocates pleasure not only as did the instructors of the Middle Ages, to be found in diversion, but as the power of all things. In study, the children must be furnished with some means to interest them. Their work must be hidden by pleasure in doing. This educator while shunning the uninteresting and pushing forward to the interesting and pleasurable, saved the children too much work that would have been for their good. He even passed over a subject if it was distasteful to the children. He places history and fables foremost among the child's study, because the narrative is so pleasing to his fancy. He demanded that the teacher animate his narrative with lively and familiar tones, and so make all his characters speak. By this means he holds the child's attention without force, of which latter means of teaching he disapproves very strongly. For all this good method was carried to such an extreme as to be demoralizing to the children in not giving them the power that should result from education, still they learned; so we see if the method had not been abused, his results would have been greater than they were. Compayre says, "Education as a plastic art has never been exhibited in a more favorable light than in this hi story of Fenelon's teaching."

One of Rollin's principles shows his place in this work. "It is necessary to show children a substantial and agreeable end, which may hold them to work and never pretend to force them by direct and absolute authority."

Franke's deep love and sympathy for children included his interest in their education, and promoted the same in them. He believed that children need pleasure and recreation and these pleasures and recreations should be means to the end, education.

Rousseau put forth the theory of education according to nature—according to the inclination of children. Surely this would be to interest them.

Pestalozzi's deep interest in education led him to make interest a basis for this wonderful work and accordingly he took up his abode with them, so that he might be able to instruct them, and this by interesting them in their subject.

Froebel, adopting and improving many of Pestalozzi's methods, worked out his doctrine of interest in a most practical way, through the kindergarten, which is still living and proving a strong argument in favor of interest in education.

Indeed the ancient world did not succeed in producing a correct or complete theory in this one particular any more than in others, all of which were crude in comparison with ours of today, nor was their practice any better than their theories. It has been reserved for the nineteenth century so distinguished for its many-sided advancement to initiate an education which leaves no part of man's nature neglected; and if we accomplish this end, one of the chief factors will be the Doctrine of Interest.

EVANSVILLE, IND.

"ALCOHOLIC BEVERAGES."

At the request of Mrs. Hunt, the world's superintendent of the W. C. T. U., THE EDUCATOR gladly prints this letter, and also a word in reply from Dr. Scovell. This is understood to be an explanation in the interest of fairness, and not the opening of anything like a controversy.

To the Editor of the Inland Educator:

The article in your April number on "Alcoholic Beverages" by J. T. Scovell says that "Instead of meeting the conclusions of Professor Atwater by instituting investigations and experiments for the purpose of testing the correctness of his findings, they" (the 'radical wing') "reiterate assertions, restate opinions, resort to invective, but introduce no scrap of rebutting evidence."

Mr. Scovell must surely have overlooked much

in his reading on the subject if he has found no "rebutting evidence" in the various medical journals and other publications that have dealt with the matter since Professor Atwater first published the data of his experiments. All the "rebutting evidence" needed is to be found in Professor Atwater's own tables and in the character of the evidence he brought forward as proof of his theory. This rebutting evidence consists of the following two points:

(1) Professor Atwater brought forward, as one proof that alcohol is a food, a conclusion which he drew from his own experiments, viz., that alcohol protected the material of the body just as effectively as corresponding amounts of sugar, fat or starch. But the tables of his experiments showed, by a plain minus sign, that the body lost much more of its most valuable material, —protein—when alcohol was given in the place of carbohydrates than in the experiments without alcohol.

It surely was not necessary to spend months of time and mints of money in proving or disproving his findings, when his own findings disprove his theory.

(2) The other point offered by Professor Atwater as evidence of the food value of alcohol was that his experiments had shown that alcohol is oxidized in the body, with the liberation of energy. Previous experiments had shown the same thing; but previous coordination of this fact with therapeutic knowledge of the disposal of drugs in the body had shown that other poisons which it would be absurd to call foods, are also there oxidized, with the accompanying liberation of energy.

Surely a big machine and a big sensation over its intricate working was not necessary to prove that if oxidation within the body can not entitle carbolic acid to a place in the food list no more can it entitle alcohol to such a place.

A professor of physiology in a medical college (Professor Winfield S. Hall of the Northwestern university medical school) has also shown that even if it should be proved that alcohol can "protect body material," such protection would not prove it to have food value unless it could also be shown that it at the same time increases cellular activity, which is a necessary characteristic of a food. To show that a substance protects or causes an increase of body material without at the same time producing a correspondingly equal or increased amount of activity is simply to prove it a protoplasmic poison, like morphia, which protects body material but decreases activity.

Professor Atwater made no attempt to ascertain the effect of the alcohol he administered upon the sum total of bodily activity during the test period, showing that he left out of account entirely vital factors in the solution of his problem.

Perhaps this plain setting forth of facts may be what Mr. Scovell calls "invective." It certainly is not so intended. A person who makes to the public an announcement which deeply concerns the public welfare must be prepared, if he has made an error, to have that error publicly corrected, in the interest of public good.

Mr. Scovell quotes from Dr. Heuppe that "Capable physicians recognize that the action of small doses differs from that of large doses of the same drug," but we fail to see the connection. The action of drugs is therapeutics. With that the school physiologies have nothing to do. They teach the effects of alcohol as a beverage, and those of other narcotics upon the functions and organs of the body from the standpoint of health and they teach the nature of such substances, which nature does not change with quantity.

A very clear setting forth of this fallacy frequently expressed in the words, "Alcohol is sometimes a food and sometimes a poison," has lately come from Professor Max Kassowitz, a noted clinician of Vienna. In an article published in the *Vienna Times* (Wiener Zeit, Nr 288, Bd. XXIII) this investigator said, "It is impossible for one and the same material to perform both these directly opposing functions [destroying and preserving] and it is absolutely determined that alcohol possesses in conspicuous measure the power to destroy and to kill living parts; thus it can not possibly become turned aside at the same time to preserve living parts."

Mr. Scovell also quotes from an authority, "Every substance which can paralyze or kill any cell or cell protoplasm, can also act in small quantities as a stimulus to cell activity." This is only saying that it can act as an irritant. Experimental evidence has not yet shown that alcohol in any quantity increases the amount of activity produced during the period of its influence, but the reverse. Some observers have confounded a brief preliminary excitement of a few moments' duration with its essential characteristic action, that of a paralyzant, which begins to be manifest usually from ten to twenty minutes after it is taken and continues for an hour or longer, according to the circumstances.

We trust that Mr. Scovell will continue his study of the alcohol question from the scientific standpoint, giving special attention to the re-

sults of recent physiological investigations in Europe as well as America.

MARY H. HUNT.

Some time last year Professor Atwater, who has the reputation for knowing more about food and its physiological value than any other man in America, made some interesting experiments which he thinks prove that alcohol in dilute form in moderate doses is not a poison but a food something like starch. A circular "An Appeal to Truth," issued January 1st, 1900, Mrs. Hunt's address at Chicago, and the present paper, are all directed against Dr. Atwater's conclusions. The statements quoted are from men who simply deny the conclusions but apparently bring out no new facts—simply opinions. In my estimation such opinions do not constitute "rebutting testimony." If truth is to be established by opinions, then Mrs. Hunt should quote the opinions on both sides.

J. T. SCOVELL.

SOME COMMON MISTAKES IN ENGLISH.

Illiterate people make many mistakes in the use of English but I wish now to speak of some of the errors common among educated persons. Few persons, reasonably well educated, or with any kind of a higher education, will make the gross errors which are made by the illiterate in speaking and writing. Most of us can make our verbs agree, with their subjects in person and number. We do not use pronouns for adjectives nor do we employ double negatives, as a rule, though I have frequently heard teachers make this mistake. It is a comparatively easy matter to use the correct form of the pronoun, *who*, in most instances.

Any one who pretends to have anything like a fair knowledge of the English language or skill in its use must be able to avoid such errors as those indicated above. If one never made any such mistakes in the use of the language, he could not on that account be said to be a master of it. There are many less noticeable errors the avoidance of which marks the scholar. Many educated people, if one deficient in English may be said to be educated, violate even the simple principles indicated above and do not know it. What a rare thing it is to hear a person lecture or talk for an hour without using any incorrect expressions! Ministers, lawyers, professional men and public speakers of all kinds are constantly using English which is not even grammatical not to say anything about its appropriateness or rhetorical qualities. The finer qualities of English may be left out of the question and most of our educated men and women, teachers included, may be easily convicted of gross abuse of our mother tongue.

Most of these people avoid saying, "The books is interesting." A good many will say, "How terrible it would be if you was a saint!" Many more will use the following expressions: "The formation of paragraphs are very important," "The whole system of mind-reading, mesmerism, and spiritualism seem to be connected," "The mother, with two young children, have gone abroad," "Since the matter has been discussed, there has been many inquiries," "No one of these forty English words were in use before the battle of Hastings," "While either of these are hungry, nothing will ever give them sleep," "In literature is embalmed the short stories of the day," "In the evening there was always some social games," "Neither of the girls were very much at their ease," "We lament the excessive delicacy of his ideas, which prevent one from grasping them," "The boy or his father are at fault," "Each man, woman, and child were given a prize," "Every boy and every girl are expected to be obedient."

These mistakes are all primarily violations of the rule, that a verb must agree with its subject in number. In a few instances, the mistake with the verb leads to the use of a plural pronoun where a singular form should be used. The majority of these mistakes may be made before fairly well educated people without attracting their attention, and the persons who always avoid them in using the language are rare.

It is easy to see why the violation of this principle is so common. In most of the sentences, the verb is somewhat removed from the principal word of the subject; and in nearly all such cases, a substantive word, which is plural, comes between the verb and the principal word of the subject with which the verb should agree. The speaker or writer falls into the error of making his verb agree with this plural substantive word, which is usually the principal word in a prepositional phrase, instead of making it agree with the principal word of the subject; e. g., "No one of these forty English words were in use before the battle of Hastings." The person who uses this sentence is thinking that the verb should agree with the word, "words," which immediately precedes it, whereas this word is the principal word of the propositional phrase, "of these forty English words," and the verb should be "was" to agree with the word, "one," the principal word of the subject.

In other instances some other distracting ele-

ment in the subject causes the speaker or writer to fail to make his verb agree with it; e. g., In such a sentence as, "In the evening there was always some social games," the principal word of the subject comes last in the sentence, and the verb should be "were" to agree with it. If the parts of the subject be singular and joined by an alternative conjunction, the verb should be singular; e. g., "The boy or his father is (not are) at fault. Even if the parts be joined by a copulative conjunction, if they be singular and preceded by such words as, "each," "every," or "no," the verb should be singular; e. g., "Each man, woman, and child was (not were) given a prize."

JOHN B. WISELY.

TWO POEM-STUDIES.

THE LADDER OF ST. AUGUSTINE.

St. Augustine, once said that we could frame a ladder, (of life) if we would trample all our bad and evil acts under our feet. As we travel the paths of life, we should rise above our difficulties, and let each day be better than the preceding one. All our bad thoughts, all our evil deeds, must be trampled down first, and then we push on to brighter fields. We are not like a bird, when it wants to reach a high point, it spreads its wings and off it goes; but when we have a certain height in life we would like to reach, we must raise our character and leave those evil deeds alone and then we can reach it.

Mountains are here compared to life; as we start at the base we see a rough path, that we think is impassable; but as we reach those paths there is always a way to get through; this is the same with life; there are certain troubles of which we think they are impossible to overcome; but as we approach them they do not look so bad, and are made very easy. This is a beautiful comparison. We must obtain our position in life as our great men did; by toiling and striving for it.

The purpose of this selection is to cause us to act. Now we are going to step off of what we stood on too long, with our shoulders bent and our eyes cast downward and rise higher. When we have done a wrong act, we cannot call it back and do it over, but we must, "Let the dead past bury its dead," and in the future try to accomplish something better. Now I will tell you the theme:—It is, "Character Building."

EFFIE BICKNELL, Age 13.
District No. 7, Hamilton Tp., Sullivan Co., Ind.

THE DEATH OF THE FLOWERS.

The author wishes to have us realize the uncertainty of life by carrying our feelings down to the very lowest depths of sorrow. To do this he describes the conditions of the objects of nature; he says the winds are howling, the trees are stripped of their beautiful, green foliage, that the meadows look as if they have been burned, and the robin, wren and jay, whose songs cheered our sad hearts, have flown to a more suitable climate, but the crow still remains.

The comparison of flowers to humanity in this poem is very beautiful. The flowers as spoken of in second stanza are compared to our loved ones who have passed away from earth; the spring flowers, the anemone and violet, are compared to those who are taken in the prime of life; the summer flowers, which die in midsummer, are compared to those who are taken at middle age, and the autumn flowers, the golden-rod, aster and sunflower, are compared to the aged; as frost o'ertakes autumn flowers so death o'ertakes man.

In the preceding comparison the author has shown very plainly the likeness of flowers to human nature. When some of our beloved friends are taken from us we see their works around us and we look and long for them but all in vain, just as the South wind searches for the beautiful flowers he used to see.

The author now wishes to teach us the lesson of submission to God's will, so he tells us of his beautiful sister who grew up by his side, as grew the flowers in the wood, and was taken in the prime of her life.

I think Mr. Bryant must have been young when his sister died, and he could not help thinking it unjust of God to take her from him, for she was the joy of his childhood days, but as he became older he learned to think that it was for the best that she was taken away.

LELA FRAKES, age 14,
District No. 7, Hamilton Tp.,
Sullivan Co., Ind.

THE PROGRESSIVE MYTH.

Under the above title THE INLAND EDUCATOR for June had an appropriate article in which its writer calls special attention to the more intricate myths (and fairy tales) "in which the underlying truth is deeply imbedded in what seems to be a most absurd and grotesque story."

This last remark is very significant. It may sometimes be no easy task to find the underlying truth, or "recognize the allegorical nature

of the medium by which the lesson is presented."

In an eastern educational paper, "Red Riding Hood" has been condemned as bloodthirsty, while in reality the story is a poetical presentation of a phenomenon of nature.

Little Red Riding Hood (Rotkäppchen) is the beautiful red sky at sunset. The grandmother is the earth, the mother of all. The wolf that devours grandmother, is the night, which enshrines the earth in darkness and makes her look so queer. Long after sunset the "evening red" may be seen, but finally it disappears; the wolf has also devoured Rotkäppchen. The hunter that comes in the morning and kills the wolf, is the sun. Then grandmother reappears, and so does Rotkäppchen, "the purple glory of the morning."

In a certain story-book a moral is drawn from the tale: "If you have to do an errand, don't loiter on the road, else etc." This is an absurdity. To impart the story in the manner indicated, is all that is necessary, and as to its being harmful, it is not more so than the reading of, "The moon is the shepherdess, the little stars are the lambs," and similar pieces. Such lessons exercise and stimulate the imagination, and through this the emotional side of the child.

In "Sleeping Beauty," too, nature is personified. This story resembles a Greek myth, Adonis. He was a beautiful youth, greatly beloved by Aphrodite. Her grief was so great at his death that he was allowed to return to earth and spend half of every year with her. His coming was attended by the springing up of grass and flowers, and the singing of birds, and was symbolical of the return of vegetation in spring after six months of hiding in the ground. (*Plato the Teacher*, page 173.) The old woman—dás alte Mütterchen—working at her spinning-wheel, the symbol of Time, is a trait of another Greek myth.

Sleeping Beauty (Dornröschen)—like Adonis—is the earth in winter, when the whole nature seems to be dead. The thornhedge which is growing around the castle and hiding it from view, is snow and ice which cover the ground. The knights who come to deliver Dornröschen, are the warm, beautiful days we have sometimes as early as February. But they don't bring spring, the knights can't penetrate the thornhedge. When the time is over, another knight comes, and the thornhedge opens from itself; the sun has greater power, snow and ice melt. The knight awakens Dornröschen, and with her the other creatures awake, even the flies on the wall, and men resume their interrupted work, and the Prince and Dornröschen are married. The warm rays of the sun kiss the earth, new life springs up, and heaven and earth celebrate their nuptial feast in beautiful spring.

In conclusion, it may be stated that literary men in Germany don't consider it under their dignity to study the old fairy tales to find out their meaning, which in some is deep and highly poetical.

THEO. DINGLEDEY.

CHARLES A. GREATHOUSE.

In accordance with its custom to present sketches of the candidates for superintendent of public instruction, THE EDUCATOR has pleasure in giving here a portrait of the Democratic nominee, together with a sketch of his life. Two years ago we presented a portrait and sketch of Superintendent Frank L. Jones, the present incumbent of the office, who has been renominated by the Republican party.



Among the younger generations of school men, who are now accomplishing so much for the educational growth of Indiana, is Charles A. Greathouse, candidate for superintendent of public instruction on the Democratic ticket. He was born July 17th, 1870, in Point township, Posey county, at the junction of the Wabash and Ohio rivers. He was reared on the farm. His father died when the son was but eight years old. He attended the district schools during the winter and in the summer performed the

duties falling to the lot of the average boy on the farm.

In the fall of 1884 he entered the Central normal school at Danville, Ind. The following year he taught in his home township and with the proceeds of the year's work re-entered the Danville normal for another year. The year following he taught in the public schools of Hendricks county. He continued his education at the state university, at Bloomington, for two years, and afterwards was principal of the township graded school at Springfield, Posey county. From that position he was called by the board of school trustees of Mt. Vernon to the principalship of the central building, in that city.

In 1895, upon the resignation of Walter W. French, as superintendent of the schools of Posey county, Mr. Greathouse was chosen as his successor. He has since been twice unanimously re-elected by the board of township trustees, several of whom differed from him politically. This is substantial commendation, and the schools of Posey county hold a high rank that justify the wisdom of the board's action. The varied experience which Mr. Greathouse has had as a teacher, covering the work of the school from the rural district through the high school would stand him in good stead in such a position as that to which he aspires.

Besides being a teacher and an efficient superintendent, Mr. Greathouse has continued to be a student. Upon an examination by the state board of education in 1895 he was granted a professional state license. These qualifications, added to his affable manner and gentlemanly bearing have recommended him to his friends as a desirable candidate, well equipped for this very important position at the head of Indiana's system of public schools.

McLAUGHLIN'S HISTORY OF THE AMERICAN NATION.

The progressive teacher will always be interested in the appearance of new text-books which may make his work more effective. No phase of educational work has progressed more rapidly in recent years than that of text-book writing. Only a few years ago teachers complained, and with good reason, that the text-books on United States history were quite inadequate. This was especially true of books designed for high school use. In fact the teaching of American history was confined, for the most part, to the seventh and eighth grades until a comparatively recent period. There was as a consequence almost no demand for books adapted to high school use. Recent advances in education have, however, created a demand for high school courses in American history. To meet this demand, text-books more elaborate than those used in the grades were necessary. One of the best of these books is McLaughlin's *History of the American Nation*. This book seems to meet the essential requirements of an ideal text. The writer has a thorough and comprehensive grasp of the entire subject and his direct, lucid and vigorous style adds interest to his narrative. His strong sense of justice is evident in his treatment of the causes of the Revolution and other controverted points. He is a judge, not an advocate. Due attention is given to historical perspective. American history has its roots in European soil and an understanding of European conditions is indispensable to an adequate comprehension of some periods of American history. Professor McLaughlin shows clearly the connection between English and American politics in the period immediately preceding the Revolution. The colony of New Amsterdam is looked upon as an expansion of Holland, and the history of Holland in the sixteenth century is made to contribute to a better understanding of the American colony. The references for collateral reading are divided into two classes: "short accounts" and "longer accounts." The student (or teacher) may thus select a reference suited to the time that he can give to the subject. These references, too, are to modern and readable books. Professor *Dryasdust* used to prevail and it was formerly considered necessary to be stupid in style in order to be considered profound. Fortunately this condition is a thing of the past. Historical works now exist which it is a pleasure to read. They are literature as well as history. Frequent reference is made to the works of Parkman, Fiske, Woodrow Wilson, and to the *American Statesmen Series*, and other authoritative and interesting volumes. The book abounds in reproductions of old prints, fac-similes of historical documents, and other illustrations which cannot fail to add a vividness and a reality to the text The reproduction of the old maps relating to the period of discovery and exploration is especially commendable. These maps should show that the discovery of America was not an instantaneous occurrence but an evolutionary process. They should also release the student from the "bondage of the modern map."

Professof McLaughlin's book is second to none for high school use. [D. Appleton & Co., $1.50.]

T. F. MORAN.

DANTE WAS A SEER.

The great Florentine felt that he was a prophet with an imperative communication from God, says Charles A. Dinsmore in the June *Atlantic*. His rare ethical insight and his extraordinary intellectual gifts were the seals of his office. He spoke in the vulgar tongue that his word might come to all. Even Isaiah, after his exalted vision in the temple, had not a more unjust sense of mission than had this rugged soul as he wandered about the world experiencing and working out "his mystic, unfathomable song." He too had a vision. In closing the Vita Nuova he says: "It was given unto me to behold a very wonderful vision; wherein I saw things that determined me that I would say nothing further of this most blessed one, until such a time as I could discourse more worthily of her. And to this end I labor all I can, as she well knoweth" From our knowledge of Dante we may well believe that this was more than a beholding of the ascended Beatrice whom he had loved in the flesh. It was a vision of that which she symbolized to his mind, namely, the Divine Wisdom, and its dealings with the children of men. He too would justify the ways of God to men, and his whole after life was a training,—

> "So that the shadow of the blessed realm
> Stamped in my brain I can make manifest."
> (Par. i. 22.)

Dante was one of the three preëminent poets of the world, because first of all he was a seer. "The more I think of it," says John Ruskin, "I find this conclusion more impressed upon me,—that the greatest thing a human soul ever does is to *see* something, and tell what it saw in a plain way. Hundreds of people can talk for one who can think; but thousands can think for one who can see. To see clearly is poetry, prophecy, and religion—all in one." No eye ever saw more penetratingly the heart of man and the sublime grandeur of the moral law than did this thirteenth-century prophet. What he saw vividly he could state vitally. He was a poet, because the heart of all truth has rhythm and poetry in it.

AMONG THE NEW BOOKS.

Charles B. Davenport and Gertrude C. Davenport have prepared an *Introduction to Zoology* which is intended to give the average student an everyday knowledge of the common animals. It is not a book for the specialist, though well calculated to awaken such an interest as may induce many to become specialists in the subject through more advanced study. The book is profusely illustrated. [The Macmillan Co., 412 pages, $1.10.]

The tendency, now quite common, to use Nepos for second-year classes in Latin assures interest in the new edition of *Cornelius Nepos' Twenty Lives*, prepared by John Edmund Baras. The text is clear, there are numerous illustrations and maps, sixty pages of notes, twenty pages of exercises in English to be translated into Latin, and a vocabulary for the whole text. [The Macmillan Co., 316 pages, 90 cents.]

Domestic Science in Grammar Grades is the title of a supplementary reader, by L. L. W. Wilson. It consists of well-chosen extracts from eminent writers of prose and verse, and narrative or descriptive sketches, all relating in some way to some department of the home. The book is well conceived. [The Macmillan Co., 193 pages, 60 cents]

A little book that will both fascinate and instruct girls and boys is *The Story of Captain Meriwether Lewis and Captain William Clark*, by Nellie F. Kingsley. It is an entertaining narrative of the difficulties and triumphs of these intrepid explorers, whose adventures helped to give us the great northwest. It is nicely illustrated, and should have a place in every boy's library. [Werner School Book Co., 127 pages, 25 cents.]

Students of literature in general and students of the drama in particular will be glad to find an excellent summary of the principles of dramatic composition in a little book by Elizabeth Woodbridge entitled *The Drama, Its Law and its Technique*. The subject is discussed from the two standpoints suggested by the title, and includes both comedy and tragedy. The book is well adapted to the use of college classes and will be found especially valuable to those who are studying Shakespeare, since most of the examples used to illustrate principles are taken from the Shakespearean plays. [Allyn & Bacon. 198 pages, 80 cents.]

Specimens of the Forms of Discourse, compiled and edited by E. H. Lewis, is a collection of sixty extracts from forty different authors, designed to illustrate by choice examples the five forms of discourse—description, narration, exposition, argumentation, criticism. Following each selection is a note by the compiler to show how the principle to be illustrated is applied. At the close of the volume there are fifty-eight

subjects for which the selections already studied would suggest treatment by the student. [Henry Holt & Co., 367 pages, 60 cents.]

Professor Gustav Gruener, who has edited with introduction and notes an edition of Sudermann's *Frau Sorge*, says in his preface that in ten years this novel has passed through forty-five editions and hence his effort to make the text available for the class-room needs no justification. This novel, the author's first, is considered his best both in literary quality and in the strength and originality of character portraiture. [Henry Holt & Co., 268 pages, 80 cents.]

The Young Folks' Cyclopedia of Persons and Places is an admirably conceived and a well executed piece of work. The standing of the author, John Denison Chaplin, as a scholar of large experience in editing cyclopedias and dictionaries will give a reliable character to the work, and there is no doubt that older folks as well as young ones will find it a most convenient and satisfactory book of reference. It will be found valuable as a stepping stone to the habit of using reference books. The large type and clear headings make it easy to turn to any desired subject, and the choice of material seems most judicious. No juvenile library is complete without this concise yet comprehensive, entertaining yet instructive volume. [Henry Holt & Co., 958 pages, $2.50.]

Many teachers who could not attend the meeting of the superintendence department of the N. E. A. at Chicago will doubtless be glad to know that the proceedings are now published and available. The papers of most general interest are "The Status of Education at the Close of the Century" by Dr. Nicholas Murray Butler, "Alcohol Physiology and Superintendence" by Professor W. O. Atwater, and "The Trail of the Superintendent" by Superintendent Aaron Gove. The discussions of these papers by Dr. Harris, President Eliot, Superintendent Dutton, Mrs. Hunt of the W. C. T. U., and others are also given, making a pamphlet of 118 pages of great interest and value. Copies may be procured by sending 25 cents to the secretary, Irwin Shepard, Winona, Minn.

In the "International Education Series" part II of Edward Gardiner Howe's *Systematic Science Teaching* has appeared. This volume is intended for the advanced grammar grades as the first part was designed for the earlier grades. Briefly stated, this is the kind of a book that will open a boy's—or a girl's—eyes to the things about him. The lessons are planned according to seasons. The four general subjects studied are "The Stars and Earth," "Minerals and Rocks," "Plants," "Animals." There are experiments almost without number, lists of suggestive questions and interesting bits of information and description. It is the kind of a book that will keep pupils both interested and busy. [D. Appleton & Co., 373 pages, $1.50.]

There are three new volumes in Appleton's "Home Reading Books:" *The Chronicles of Sir John Froissart* are condensed for young readers by Adam Singleton. The quaint stories of these quaint times will give young people a picture of the fourteenth century that the ordinary histories do not give. The work of the editor in inserting explanatory words after words that are rare or obsolete will aid much in the reading; while the extended note of thirty-seven pages will prepare the reader for the chronicles that follow.

Stories of the Great Astronomer, by Edward S. Holden gives in conversational style the great discoveries and deeds of Copernicus, Tycho Brahe, Kepler, Galileo, Newton, Herschel and others. It is entertainingly written, and enlivened by 114 illustrations.

Mr. Frederick Ober has had many opportunities, both as a scientist and as a government agent to study the group of islands lying to the southeast of us, so that his *Storied West Indies* will be appreciated both because it is authentic and because it abounds in adventure, romance, folk-lore, traditions, pirate stories and others. Our present interest in the West Indies gives this book an especial value. [D. Appleton & Co., each volume 75 cents.]

EDUCATIONAL, LITERARY AND GENERAL ITEMS.

Professor Weck who taught in the grades at Washington, Ill., last year, goes to Pekin, Ill., next year as principal of a ward school.

The summer school of the Garvin Commercial college has a good number of students, showing that the advance in requirements meets popular approval.

Charles H. Thurber of Chicago university, and editor of *The School Review*, has entered the editorial department of Ginn & Co. at their Boston office.

Miss Trotsy Bell, for several years a successful

primary teacher in the Ashland, (Ky.) public schools, was married in June to Mr. Samuel Crawford.

Superintendent W. E. Alexander is elected for the fifth time at Bedford. Mr. Alexander has been very successful and has a strong hold on the people.

Superintendents I. F. Myer, George B. Asbury of Flora, and J. O. Engleman of Burlington have closed a very successful seven weeks' normal at Flora. The enrollment was nearly sixty.

Superintendent J. G. Crabbe and wife of Ashland, Ky., sailed for Europe June 16, for a much-needed rest. They were accompanied by two of the Ashland teachers, Misses Josephine and Lizzie Ogden.

The normal school at Mitchell, which is now under the management of Professors Stipp and Dunlavy, has had a very successful year. Its larger numbers and increased interest promise well for the future.

Miss Lily Short, who taught in the Lebanon high school last year will teach Latin in the Bedford high school the coming year. Miss Short completed the work in the State normal with the class of 1900.

The Kankakee Optimist completes its first year of three numbers with a credit balance of $25. This is a good showing for a high-school paper, especially for one that is so artistic and wide-awake as the *Optimist*.

Professor W. P. Burris, formerly of Bluffton, Ind., but for the past three years superintendent of Salem, O., has resigned to continue his studies. Professor Jesse Johnson, principal of the Salem high school, succeeds him.

Superintendent Colfax Martin, of Cayuga, makes an interesting report of the work done this year and prints a manual of his schools. Mr. Martin is a professional teacher and superintendent and knows how to succeed.

E. B. Bryan, who has been doing professional work during the past year at Clark university returns to the department of pedagogy at Indiana university, while Sanford Bell who has been an instructor at Bloomington goes to Clark.

A. J. Kinneman who has just completed an A. B. course at Indiana university has been assigned a fellowship at Clark university where he will spend the next two years. He already has a reputation in this state as an able teacher and a scholar.

The two cities that are looking most anxiously toward the N. E. A. for 1901 are Detroit and Cincinnati. Meeting on the eastern coast this year and on the western coast last year some inland city will doubtless be selected for the honor next year.

THE EDUCATOR regrets to learn that *School and Home Education* sustained a loss during the recent fire at Bloomington. Among other property destroyed was the mailing list, and the editor requests subscribers to report their names, addresses and dates.

Henry Cromwell, who taught at Paxton, and afterward completed a term's work at Hymera, will be principal of a ward school in Brazil next year. Mr. Cromwell is one of the coming men in the profession. He possesses fine ability, and the genius of doing things well.

The northern Indiana normal school at Valparaiso reports an enrollment for the year beginning August, '99, of 3,378. Its twenty-seventh annual catalogue, just issued, shows a large and able faculty, and a course of study broad enough to accommodate all its students.

Messrs. Maison Ad. Braun & Co. of New York have lately issued a catalogue of their carbon prints which in itself is a work of art. With the present widespread interest in high grade pictures for schoolroom decoration such a catalogue as this will be of great value in helping teachers in their selections.

Miss Minnie B. Ellis for the last three years principal of the Kentland high school, has been promoted to the superintendency of the Kentland schools. Miss Ellis spent three years in DePauw university, and afterward graduated from the State normal and Indiana university. Her promotion was due solely to her successful teaching.

New Albany has won the first and second prizes for essays in the state high school contest under the management of the Sons of the Revolution. The first prize was taken by Miss Alice Devol who wrote on the Expedition of George Rogers Clark. Miss May Starr wrote on Burgoyne's Invasion and received the second prize. Both of these young women belong to the graduating class of 1900.

Fifteen thousand readers of THE EDUCATOR, who have been entertained and instructed by the bright, cheerful, practical articles of D. W. Dennis will be glad to know that the good doctor has taken a new lease of life in his marriage June 14 to Clarissa Emeline Zeller. It is a real pleasure to rejoice with Dr. and Mrs. Dennis in their joy, and to wish them long continued life and usefulness.

Wonderland for 1900 is at once a work of art and a clever and effective piece of advertising. Of the 130 pages the first seventy are given to the romantic story of Lewis and Clark as the explorers of the great northwest. The story of the Northern Pacific railway which follows is hardly less fascinating. The whole book is richly and profusely illustrated. It can be secured from Charles S. Fee, St. Paul, Minn.

The patient and persistent efforts which Superintendent Carnagey of Columbus, Ind., has made to elevate the departments of history and literature in his school now find a very substantial reward in the fact that two of his graduates have taken prizes in history at the State university. The Foster prize of $50 is awarded for the second time to D. O. McGovney, and the second prize of $20 is awarded to Miss Mattie B. Lacey.

At Heltonville, Lawrence county, on June 9, graduating exercises for Pleasant Run and Flinn townships were held. There were ten graduates. There was a large enthusiastic crowd present with good music and a good time. Superintendent W. E. Stipp, who has manifested large interest in his work delivered the diplomas. N. W. Freeman, who taught at Heltonville and was principal of Pleasant Run township has returned to his home in Orange county.

Mr. Charles D. Renick who had charge of the schools in Bridgeton during the past year and who has been identified with school work in Parke county for several years is the republican nominee for clerk of the circuit court. When THE INLAND EDUCATOR was established in 1895 Mr. Renick took the field in its behalf, and there has not been a summer campaign since then that he has not been one of its most enthusiastic and reliable representatives. He is well qualified for the position he seeks.

Mr. William S. Cushing of Michigan City has noted the following results in correct usage of words by a child between five-and-a-half and six years, no effort being made to teach the words: 712 nouns, 61 per cent.; 263 verbs, 22 per cent.; 143 adjectives, 12 per cent.; 34 adverbs, 20 prepositions, 9 pronouns and 5 conjunctions; the last four groups making 5 per cent. of the whole 1,186 words. Mr. Cushing thinks his list is nearly, but not quite complete.

The Salem high school graduated a class of seven this year, H. B. Wilson superintendent. The class of 1901 has nineteen members. The summer plans of at least seven of the teachers speak well for the Salem schools: H. B. Wilson, Winona summer school or Chicago university; L. D. Coffman, Chicago university; O. W. Douglas, Chicago university; Miss Catharine Chilton to Paris Exposition; Miss Grace Prow to Winona or Indiana university: Miss Bradie Shrum, Winona; Miss Kate Williams to State normal.

Since the June issue went to press the following commencement invitations have been received: Evansville, forty-three graduates, W. A. Hester superintendent; Clark high school, Evansville, eight graduates; Washington township, Daviess county, W. A. Wallace superintendent, Aikman Carnahan trustee, sixteen graduates; Indian Creek township, Pulaski county, J. H. Reddick superintendent, S. G. Brown trustee, six graduates; Summitville, five graduates, Thos. Smith superintendent; Anderson, forty-four graduates, John W. Carr superintendent.

The commencement exercises of the Richmond high school were held in the admirable hall of the high school building on Friday morning, June 15. The orators of the occasion were chosen from the members of the class, and the great enthusiasm of the audience may be taken as a just measure of the success of the speakers and of the popularity of the idea. There are many things to be said in favor of this way of conducting a commencement, and the morning session is surely to be commended. Superintendent Mott and Principal Ellabarger have a model school.

Perry Newell Hiser was married to Electa Dorcas Campbell June 18. Mr. Hiser is well known among the teachers of Indiana and has for several years past been a familiar attendant at the State teachers' association. His chosen field of labor is in the line of organized charity. During the year just closed he has been at the head of the truancy work in connection with the Indianapolis schools and with organized charity as well. He is now called to New York, where, we understand, he has a very responsible position with the charity organization of that metropolitan city. We feel that their many friends will join with us in offering most sincere congratulations.

In commending the excellent work of the Madison, Ind., public schools the *Daily Herald* says: "The teachers are energetic, thoughtful and conversant with the best methods of the day. Their enthusiasm for their work was shown by the large number who took courses of instruction last summer, and the large number who will avail themselves of a like privilege this summer. No one has worked harder for the accomplishment of the above results and no one deserves more fully the commendation of the school patronage than Superintendent McDaniel.

In season and out of it he has labored thoughtfully, skillfully and earnestly to make the Madison schools the best in the state."

Schuyler C. Davisson, associate professor of mathematics in Indiana university, has recently received the degree of doctor of philosophy from the University of Tübigen. He will soon return to America and will be at his old post at the opening of the next college year.

Superintendent E. E. Olcott, formerly of the Charlestown schools, but now of the Elizabethtown (Ky.) schools, has recently issued a little booklet on mensuration for eighth grade or first year high school. The book is intended as a preparation for geometry. It is made up of a series of questions, suggestions and problems. The student is thrown upon his own powers and must find out for himself. The book is on the right plan, and will furnish the best preparation for formal geometry. The author has a mensuration cabinet which furnishes the needed apparatus for working out the problems of the book.

The Ft. Wayne high school commencement occurred on Friday evening June 15. The crowded Temple attested the interest in the schools. The very presence of a great cultured audience like this is an inspiration to educators and an encouragement to education. There were thirty-three graduates from the high school and seven graduates from the training school. Superintendent Study, Principal Lane and Miss Montgomery of the training school were in charge of the commencement, and the members of the high school faculty were present on the stage. The class was represented by a salutatorian and a valedictorian who spoke somewhat out of the ordinary style for such occasions. The successful evening closed with a delightful reception to the graduates.

The commencement exercises of Jackson township, Sullivan county, were held Friday evening, June 22, at Hymera. There were eleven graduates. Trustee Asbury is a fine school man and believes in good teachers with long terms and good salaries. Henry Cromwell, '98, State normal, was the principal. The exercises consisted of music and addresses, and the presentation of diplomas by Superintendent Park. There was a fine audience present. Such occasions are altogether worth while. They serve to encourage the pupils themselves and to stimulate to further endeavor, but better by far than this, they furnish the very best opportunity to say some things that need to be said to the community directly. The interest manifested by the parents in educational questions is one of the most hopeful signs of a better day. Superintendent Park is one of the very best superintendents in the state. He wants to know the best way and he is busy finding out. He does not spare himself, and his sole aim is to put his schools upon the highest plane possible. In his institute this year he will have as instructors Professor S. Y. Gillan of Wisconsin, and Miss Anna E. Logan of Cincinnati.

"AS YOU LIKE IT."

A select and appreciative audience of about 1800 was present at the Grand opera house in Terre Haute, Wednesday evening, June 28, as the invited guests of the graduating class of the Indiana state normal school. The occasion was field day, and the chosen exercise was the presentation of that most delicate of Shakespeare's plays, *As You Like It.* If every member of the cast was an amateur, that must not be taken as a sign that the performance was attempted on an amateurish basis. For in stage setting, in costuming, in intelligent interpretation of the comedy and in fine bits of acting, the performance was generally admitted to be one that would have been very acceptable from a professional company. It was no small undertaking for busy students, and their success not only delighted their friends but must have been gratifying as well to the class itself. There was a notable absence of stage fright or awkwardness, and, as already suggested, some very clever playing.

As must always be the case in the presentation of this play, greatest interest attaches to Rosalind and Celia, who, as exiles, resort with Touchstone to the forest of Arden. Miss Laura Bryant as Rosalind, Miss Pennina Newsom as her fair "coz" and Mr. E. E. Hufty as the clown were all that could be desired for these roles. Coyness and modesty, archness with a touch of coquetry, and a graceful, winsome manner characterized Miss Bryant's Rosalind. Mr. B. F. Kepner made an excellent Oliver. Miss Blanche Turrell as Phœbe, and Miss May Souder as Audrey deserve special mention. The part of two pages who sing was so well taken by Miss Mayme Rapp and Mr. James Caldwell as to receive much commendation. Indeed, as was generally remarked, even the minor parts were as well played as the leading ones were—a fact which greatly enhanced the beauty of the performance.

Two years ago the class of '98 gave *The Taming*

of the Shrew. That also was given with a full setting, and the successful presentation of both plays may be attributed primarily to the enthusiasm and energy of Professor Charles M. Curry of the English department, who took full charge of the drilling and the staging.

It should be added that the program was a work of art, specially designed by Professor Turman, and worthy to be preserved as a souvenir of a very delightful occasion.

INDIANA STATE BOARD QUESTIONS FOR JUNE, WITH DISCUSSIONS.

GRAMMAR.

Within our beds awhile we heard
The wind that round the gables roared,
With now and then a ruder shock,
Which made our very bedsteads rock.
We heard the loosened clapboards tost,
The board-nails snapping in the frost;
And on us, through the unplastered wall,
Felt the light sifted snow-flakes fall.
—*Whittier.*

1, Name the words between which the following prepositions show relation: (a) "Within"; (b) "With"; (c) "on"; (d) "through".
2. (a) Classify all the verbs as transitive or intransitive.
(b) Give the principal parts of "heard," "made," "felt."
3. Select the infinitives and give the case of each, stating why each is in that case.
4. Parse (a) "that"; (b) "now and then"; (c) "bedsteads"; (d) "snow-flakes".
5. Name the modifiers of "heard" (line 1).
Name the modifiers of "heard" (line 5).
6. Classify the clauses into principal and subordinate and name the subjects of each.
7. Select (a) an adjective in the positive degree.
(b) one in the comparative degree.
(c) Express the thought of the first clause using the passive voice of the verb. Describe the changes you made.
8. In what grade would you begin the analysis of sentences? Why?
9. For what reasons is the attempt to teach grammar by one who has never mastered the subject to be deprecated?
10. Write about one hundred words on one of the following subjects, expecting that your efforts will be criticised on all the features that characterize a well written composition:
(a) Our New Possessions.
(b) House Cleaning.
(c) Does the World Owe Me a Living?

1. Prepositions do not show relation between words. They show relation between ideas. These prepositions show relation between the following ideas: (a) *heard* and *beds*. (b) *roared* and *shock*. (c) *fall* and *us*. (d) *fall* and *wall*.

2. (a) Transitive: "heard," "made," "heard," "felt." Intransitive: "roared. (b) hear, heard, heard; make, made, made; feel, felt, felt.

3. "Rock" is an infinitive, adjective modifier of the word "bedsteads," and supplements the meaning of the verb, "made." "Fall" is an infinitive, adjective modifier of the noun, "snow-flakes." The question implies that all infinitives have case, which is a mistake. Infinitives used as adjectives or adverbs have no case.

4. (a) Relative pronoun, subject of the subordinate clause and expresses the relation between the principal and subordinate thoughts. (b) adverbs modifying the word, "roared," expressing the adverbial idea of frequency. (c) Noun, neuter, third person, plural, objective case, principal part of direct objective modifier. (d) Noun, neuter, third person, plural, objective case, principal part of direct objective modifier.

5. (a) "within our beds;" "awhile;" "The wind —— rock." (b) "the loosened clapboards tost;" "The board-nails snapping in the frost."

6. Principal: *We* heard within our beds awhile the wind; *We* heard —— —— snapping in the frost. (*We*) felt the light sifted snow-flakes fall on us through the unplastered wall. The clause "that round the gables roared with now and then a ruder shock," is principal to the clause which follows. Subordinate: "*that* round the gables roared with now and then a ruder shock;" "*which* made our very bedsteads rock." (Subjects of clauses are in italics.)

7. (a) "light." (b) "ruder." (c) The wind that round the gables roared, with now and then a ruder shock, which made our very bedsteads rock was heard by us within our beds awhile. The direct objective modifier in the active becomes the subject of the sentence in the passive.

8. In the seventh grade because I would begin the study of technical grammar there and the sentence is the unit of the subject. We begin with it. The analysis would be partial at first and the work would proceed step by step until about the close of the seventh year, when the children would be able to give a complete analysis of the sentence.

9. Because one who has not mastered the subject will lead the children into error; a mistake made in teaching English means a habit formed which long years of patient work will scarcely correct.

READING.

(Based on the general field of reading.)

1. Can a pupil in reading express thought and feeling beyond his own attainments?
2. What is the difference between loudness and intensity of sound?
3. Make a brief statement as to how the following should be read:

"Yet the ear it fully knows,
By the twanging
And the clanging,
How the danger ebbs and flows;
Yet the ear distinctly tells,
In the jangling
And the wrangling
How the danger sinks and swells,
By the sinking and the swelling in the anger of the bells—
Of the bells,
Of the bells, bells, bells—
In the clamor and the clangor of the bells."

4. In what consists the pupil's preparation of the reading lesson?
5. Which generally succeed better in reading, girls or boys? Why?
6. What is the defect of declaiming on reading?
7. Read the following to the superintendent:

"The war that for a space did fall
Now trebly thundering swelled the gale,
And—Stanley—was the cry."

1. No, unless accidentally.

2. Loudness refers to volume of sound, while intensity refers to force or carrying power.

3. The idea is to suggest the danger which the bells express in their angry "clamor and clangor." The voice movement is suggested in the expressions "ebbs and flows", "sinks and swells", etc.

4. In mastering the thought and feeling of the author, through a mastery of his language and imagery.

5. Girls; because they are more likely to yield themselves to the emotion of the author.

6. It often results in a kind of formal or artificial method of reading, though not necessarily so.

(Based on *How to Teach Reading*).

1. When we come to the higher interpretation of literature, can any mechanical rules essentially help us? Why?
2. What makes it impossible for the pupil to make rapid progress in good reading?
3. What is the "central idea" in the following?—

"No, this was he, Messala,
But Cassius is no more—O setting sun!
As in thy red rays thou dost sink to-night,
So in his red blood Cassius' day is set;
The sun of Rome is set; our day is gone!
Clouds, dews and dangers come; our deeds are done!
Mistrust of my success hath done this deed."

4. What emotions are proper to each of the three stanzas following?—

(*a*) On Linden when the sun was low,
All bloodless lay the untrodden snow
And dark as winter was the flow
Of Iser rolling rapidly.

(*b*) The combat deepens. On, ye brave,
Who rush to glory or the grave!
Wave Munich! all thy banners wave,
And charge with all thy chivalry.

(*c*) Few, few shall part where many meet;
The snow shall be their winding sheet
And every turf beneath their feet,
Shall be a soldier's sepulcher.

5. Would you ever call the attention of the pupil to the punctuation marks, as such?
6. Is the schoolroom adapted to the development of the higher emotions? Why?
7. Read the following to the superintendent:
"If I were an American, as I am an Englishman, while a foreign troop was landed in my country, I never would lay down my arms; never! never! never!"

1. No. See 2.

2. Ability to throw oneself into the mood of the selection.

3. The "central idea" is expressed in the line—

"The sun of Rome is set; our day is gone!"

4. (a) Pleasure in the scene, tinctured with premonition of impending evil in final lines.

(b) The excitement and fury of the charge.

(c) Tender melancholy.

5. No.

6. No. There are too many distracting influences.

PHYSIOLOGY AND SCIENTIFIC TEMPERANCE.

1. Describe the act of breathing, giving causes for each respiration.
2. How should a schoolroom be ventilated?
3. Of what aid is the study of anatomy to the comprehension of hygiene?
4. Name what seem to you the five most important topics in hygiene.
5. What are the functions of the spinal cord?
6. What is pain? What is its use?
7. What causes myopia?
8. Describe the spinal column and state its uses.
5. What causes coagulation of the blood?
(b) What is the use of coagulation?

1. The diaphragm is drawn downward by abdominal muscles, at the same time that the lower ribs are lifted, thus enlarging the thoracic cavity into which the air flows. The relaxation of these muscles reduces the cavity and expels the air.

2. In cold weather, air taken from a pure source, preferably the top of the building, drops to contact with the heating apparatus, is warmed, and, rising, is admitted to the room near the floor. The foul air register should be near the ceiling and should open into a flue that is warmed by the hot air supply pipes. In heating by a stove ventilation should be through windows slightly raised, with a board placed near the opening at the bottom so as to prevent a draft.

3. A knowledge of organic structure is essential to an understanding of the effect of food, exercise, work, rest, light, temperature, etc. upon the physical tissues.

4. Food, clothing, ventilation, cleanliness, exercise.

5. It is a central nerve tract for sensory and motor fibers, and has centers which are concerned in the simple reflex actions.

6. Physical distress due to some kind of derangement of tissues or functions. Pain is the signal of disorder.

7. A too great elongation of the eyeball, causing the image to fall in front of the retina; or excessive convexity of the lens. The latter condition may be acquired by holding the objects to be observed too near the eye.

8. It is composed of seven cervical, twelve dorsal, five lumbar vertebrae, the sacrum and the coccyx. It contains the spinal cord, and is the supporting column of the trunk. Its flexibility and its elasticity due to cushions of cartilage allow freedom of movement and prevent jars.

9. When blood leaves the body or is exposed to the air, as in a wound, the corpuscles at once commence to disintegrate, forming what is called fibrin ferment. This reacts upon the fibrinogen causing that to change into fibrin. The clot thus formed arrests bleeding.

SCIENCE OF EDUCATION.

1. Describe the plan given in *Organic Education* for telling a story to the children.
2. According to the author of *Organic Education*, the main characteristics of an effective sequence in the use of the story are five. Define each of the first two of these—completeness and unity.
3. What does the principle of selection require the teacher to do?

4. What are the requirements of proportion?
5. Give an example to show how the principle of progressive orders would be observed.
6. In leading a child to acquire a general idea, the teacher may set before him a number of particulars, and induce him to make the conclusion himself; or, he may be required to learn a statement or the general truth and then led to consider examples or instances. Which is the better procedure, and why?
7. Is it possible to train the memory directly? Give reasons for your answer.
8. Define the conscience.
9. What virtues is it possible for the school to lead the child to acquire?
10. How can the schools lead the child to form virtuous habits?

For 1, 2, 3, 4 and 5 see pp. 33–38, *Organic Education*.

6. It depends largely upon the skill of the teacher. The presumption is in favor of induction.

7. No. Memory is representative and can be best trained by accuracy and large stress in original experiences. Of course iteration is a factor.

8. Conscience is that function of soul which approves or condemns one's own actions. Its standard for judgment depends upon one's grasp of the truth universal.

9. All virtues. The school emphasizes the fundamental virtues of institutional life; such as, affection, regard for rights of others, justice and mercy.

10. By having the child live these virtues.

HISTORY.

1. Why was *America* so called? Discuss the subject of injustice to Columbus in so naming this continent.
2. (a) What three forms of government existed in the English colonies in North America?
(b) Describe one of these forms and state what colonies were so governed.
3. What distinguished English statesmen opposed the policy pursued toward the colonists by the English government?
4. What was the Louisiana purchase? When made and what was the consideration?
5. State briefly the history of the dispute with Great Britain regarding the Oregon territory.
6. What states passed ordinances of secession and joined in the attempt to organize a Southern Confederacy?
7. What were the terms of the treaty of peace between the United States and Spain at the close of the Spanish-American war?

1. In honor of Amerigo Vespucci who first published an account of the new continent. This honor really belonged to Columbus as the discoverer.

2. Connecticut and Rhode Island were under charters which allowed the colonists practically to manage their own affairs without interference; Pennsylvania, Delaware, Maryland were governed by proprietors; the remaining eight were under governors appointed directly by the king.

3. William Pitt (Lord Chatham).

4. The purchase from France of New Orleans and all her territory west of the Mississippi river. for $15,000,000. It was made by Jefferson in 1803.

5. Our first claim was based on the explorations of Lewis and Clarke. In opposition to the claims of the Hudson Bay company Dr. Marcus Whitman established an American colony in the valley of the Columbia river in 1843. In 1846 the United States and Great Britain agreed to divide the western country along the forty-ninth parallel of latitude.

6. Virginia, North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Texas, Louisiana, Tennessee, Arkansas.

7. Spain gave up her claim to Cuba, Porto Rico and the Philippenes, receiving for the last named islands $20,000,000 indemnity.

ARITHMETIC.

1. An article that cost $3.60 was sold for $4.32. What was the gain per cent.?
2. Add 356841
139864
321116
100129
786341
699999
777777
848484
111111
896678
798908
821123
222222
344567
555555

3. A merchant sells goods to a customer at a profit of 60%, but the buyer becomes bankrupt and pays only 70 cents on the dollar; what per cent. does the merchant gain or lose on the sale?
4. A vessel holds $2\frac{4}{8}$ qts. How many times can it be filled from a barrel containing $31\frac{1}{2}$ gals. of oil? After filling the vessel as often as possible, how much oil will remain in the barrel? What fraction of a vesselful will this remaining quantity be?
5. What is the surface of a globe whose radius is 9?
6. By how long a tether must a cow be bound in order to graze over exactly one acre of ground?
7. *Algebra*—The difference between the squares of two consecutive numbers is 15. What are the numbers?

1. $4.32—$3.60=72 cents gain. The rate is $\frac{72}{360}$ or $\frac{1}{5}$ or 20%.

2. The sum is 6775165.

3. Goods costing $1.00 are sold at $1.60, but the actual amount received is only 70% of $1.60, or $1.12. The gain is 12 cents on 100 or 12%.

4. $31\frac{1}{2}$ gals.=126 qts. $126 \div 2\frac{4}{8} = 54\frac{2}{3}$. Hence the vessel can be filled 54 times and leave $\frac{2}{3}$ of $2\frac{4}{8}$ qts. or 1 qt., $3\frac{1}{8}$ gills.

5. Multiply the circumference by the diameter. $9 \times 2 \times 3.1416 \times 18 = 1017.8784$.

6. One acre = 160 sq. rds. or 43560 sq. ft. Dividing this by 3.1416 and extracting square root gives 117 + feet as the radius or tether.

7. x = smaller, $x + 1$ = larger. Then $(x + 1)^2 - x^2 = 15$, or $x^2 + 2x + 1 - x^2 = 15$.

or, $2x = 14$
$x = 7$
$x + 1 = 8$.

LITERATURE.

1. Who is your favorite novelist? Why?
2. Main facts in his life?
3. His place in literature?
4. Which do you prefer to read: Orations or essays? Why?
5. Give the main thought in some poem (not by Longfellow) that you have read.
6. Comment on the power of expression in this poem.
7. Describe an important situation in some play of Shakespeare's.
8. Comment on one of Longfellow's poems.
9. What seems to you to be Emerson's best essay? Why?
10. Write a paper of not less than 150 words on A Recent Journey.

As usual these questions are designed to cause the applicant to express his own opinion and preferences and thus do not need further attention.

GEOGRAPHY.

1. In what respect does the Sahara differ from the Soudan?
2. Write a few lines on Madagascar.
3. What are the chief exports of Australia?
4. Do you consider geography a science? Why?
5. State briefly what pupils should know of geography before using a text-book on the subject.
6. How much time is required to travel from New York to San Francisco? From New York to London?
7. Why is it so much colder on the coast of Labrador than at Sitka, both in the same latitude?
8. What are the exports from Alaska?
9. What two States of the Union lead in the production of cattle? Hogs!
10. What are the essential provisions of Indiana's truancy law?

1. The Sahara is a much more arid region than the Soudan with all the attendant results of less plant and animal life, less population, trade, etc.

2. Madagascar an island lying west of South Africa and separated from it by Mozambique channel has an area nearly as large as Texas. Its surface consists of a high interior plateau surrounded by coast plains. On the plateau stand many mountains some of them volcanic and of great height. The island is very fertile particularly the low plains and great varieties of woods, india rubber, cotton, rice, coffee, vanilla, cattle, etc., are produced. The population mostly of Malayo–Polynesian stock is estimated, at from two and one-half to five millions Antananarivo is the capital and Tamatave and Mojanga are the chief ports. The government is under a French protectorate.

3. The exports of Australia are chiefly of wool, meats, hides, tallow, wheat, cotton, sugar and wine.

4. Yes, geography is a science in that it is a body of organized knowledge concerning the distribution of phenomena in mutual relation in space. It considers the earth as to its movements, shape, relief, its land and water forms, the oceans, the atmosphere as to cause and effect of interactions upon each other in causing diverse climatic conditions and hence varied conditions of plant, animal and human life.

5. There are many observational facts and relations that children may and should be taught before using a text-book. The observation of a small stream and its work, of different kinds of rocks and soils, observation of the change of position between the sun and earth through the year and accompanying weather changes, direction of wind, kind of weather, cloudy or clear sky, industries of the home neighborhood and why they are carried on there, farm, town lot, school district and other small political divisions, officers with whom they are brought in contact, their duties, etc.

6. Four days. Six days.

7. In Sitka the prevailing westerly winds are from the North Pacific ocean into which the Japan current brings great quantities of warm water, giving Sitka a comparatively warm climate. In Labrador the prevailing west winds are land winds and very cold in winter, the sea winds prevailing through most of summer blow over the cold Greenland current.

8. Fish and furs chiefly.

9. According to Conklin's *Handy Manual of Useful Information* Texas ranks first and Iowa second in the production of cattle; Iowa first and Illinois second in the production of hogs.

10. That children between the ages of six and fourteen shall attend school six months in the year. That a truant officer shall investigate cases of deliquency and see that they attend school or if they will not to proceed against them at law. Penalties mainly fines are imposed for breach of the law.

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